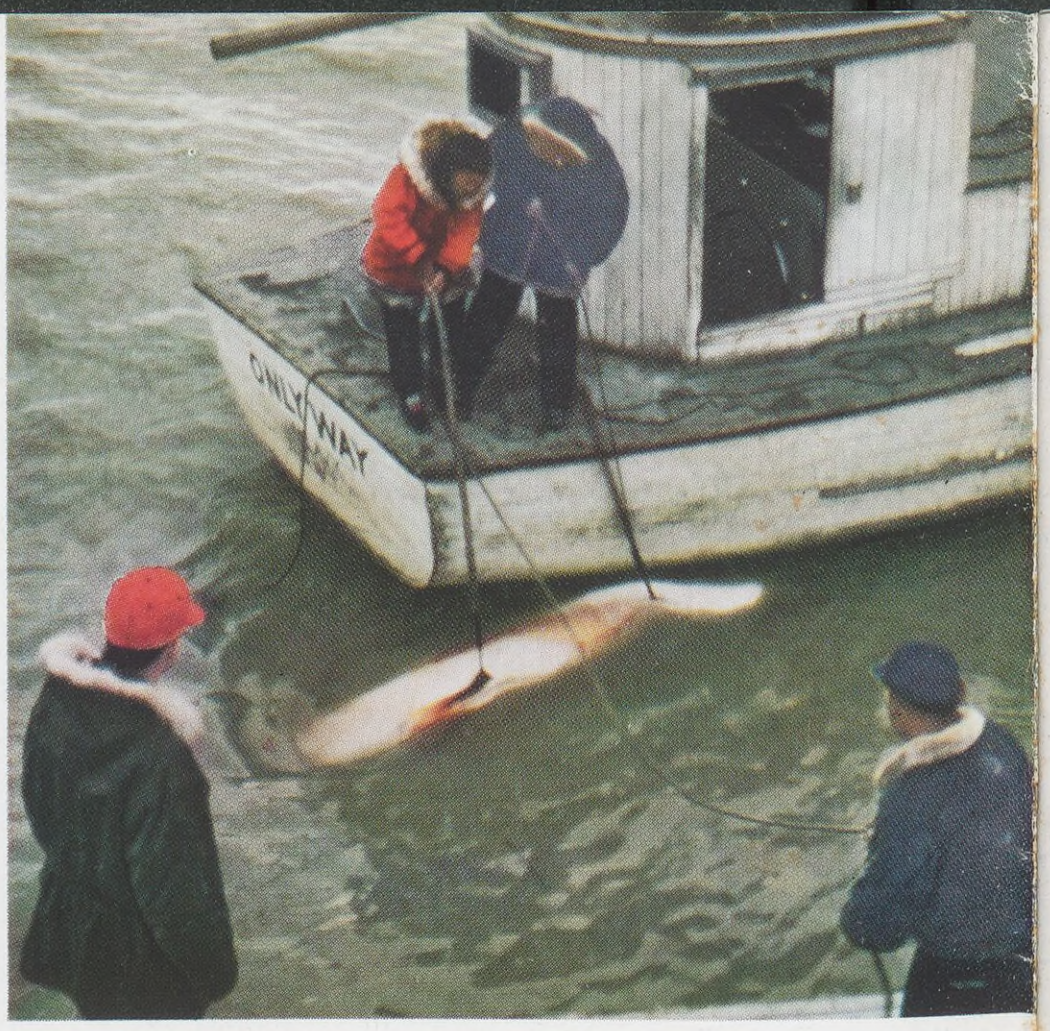
SHELL NEWS

JANUARY 1959

HIGHWAY
TO
EVERYWHERE

Eskimos harpoon and tie up a white (Beluga) whale after it has been shot in a chase over the Arctic Ocean near the Mackenzie River delta. White whales are up to 17 feet long and 3,000 pounds in weight.



Youngsters cavort about a trophy of the hunt on the shores of Whitefish Station at Kugmallit Bay, about 1,600 miles north of the U. S.-Canada border. White whales provide food and leather.

ARCTIC WHITE

ITE WHALE HUNT

Article and photographs
by MONROE E. SPAGHT
Executive Vice President
Shell Oil Company

The "great fascination of the Northland" is described through the adventure of taking part in an...

A HUNDRED years ago and more, oilmen roamed the world in ships and took their oil alive, from whales. But whales were scarce and sperm oil for lamps was costly. We were soon to be blessed with a different kind of oil—first to light and then to power the world to a new era.

Today, the search for petroleum is being pressed vigorously in many parts of the earth. As known reserves are developed and produced, the search goes farther afield. Oilmen still go to sea in ships, but they now also cover vast, distant reaches of land by car and aircraft.

A most promising—although remote—area for oil exploration is in northern Canada. Oilmen have been working for years in the oil-bearing sedimentary basin that extends—up to 500 miles wide—from south of the United

Sunset comes at 11:15 p.m. looking out over the Arctic Ocean at Whitefish Station. In early August, the sun barely dips below the horizon—and then only for a few minutes. This region is the scene of oil exploration and many believe some day it will be settled.

SHELL NEWS

VOL. 27—No. 1 **JANUARY, 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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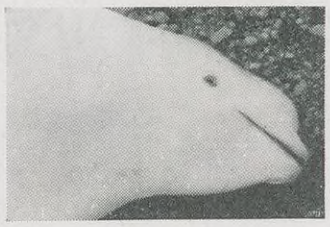
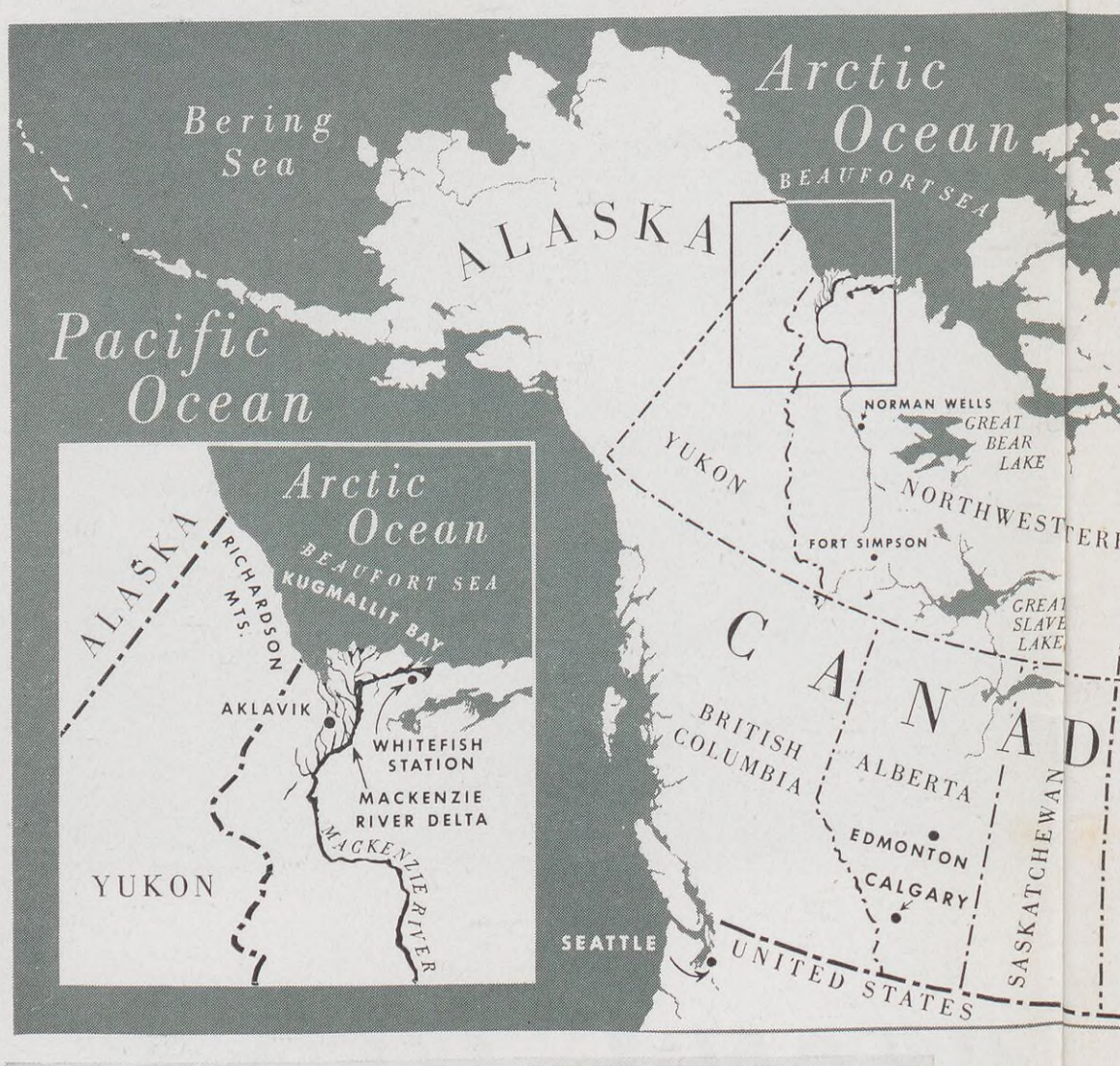
ABOUT THE COVER

By the 1970's, superhighways such as the one on this month's cover will make up the National System of Interstate and Defense Highways, linking 90 per cent of the cities with populations of more than 50,000. The social and economic effects of these and renovated state highways will be felt widely. But there are still many financing and construction problems to be solved. An article outlining the highway situation begins on page 18.

Cover Photo by Ewing Galloway



ARCTIC WHITE WHALE HUNT continued



Flying north over the Mackenzie River delta near the Arctic Ocean gives the view above of remote Northwest Territories terrain, where Shell of Canada geologists seek new oil reserves. At right is the float plane which brought the visitors on the last lap of their trip to Whitefish Station, the camp from which they accompanied the Eskimo hunters on the white whale hunt. Above right, a map of the region gives an indication of the size of Canada's Northwest Territories in relation to the size of Alaska. The Northwest Territories cover 1,300,000 square miles, more than twice the size of Alaska.

States-Canada border into the Arctic regions. Oil rigs are pushing up to the northern part of Canada's prairie provinces and geophysical parties are poking to the edge of the Northwest Territories. In advance of all are parties of geologists who fly into the wilds bordering the Arctic Ocean seeking likely places to search for more oil to meet the vast demand of the future.

Early last August, I was privileged to visit some Shell of Canada geological parties in the Arctic. And, recalling that earlier, far different oil industry, I also accompanied Eskimos on a hunt for the Arctic white whale.

Five Shell of Canada geological parties worked last summer around the delta of the Mackenzie River. That mighty stream—it has about two-thirds the flow of the Mississippi — cuts for hundreds of miles northward through the sedimentary trough before it empties into the Beaufort Sea.

The parties' central supply depot was near Aklavik, about 100 miles south of the Mackenzie's mouth. But their supply line stretches back to Edmonton, well over 1,000 miles south of Aklavik.

The flow of supplies from Edmonton to an isolated geological party is smooth though intricate. A DC-3 plane hauls the load from Edmonton via Fort Simpson and Norman Wells to a Canadian Government landing strip at Aklavik. A pick-up truck carries the supplies to a Shell of Canada depot beside a small lake. There it is put aboard a pontoon-equipped de Havilland Otter aircraft for the flight to a field party—which normally includes a senior geologist, one or two assistants, a cook and a helicopter

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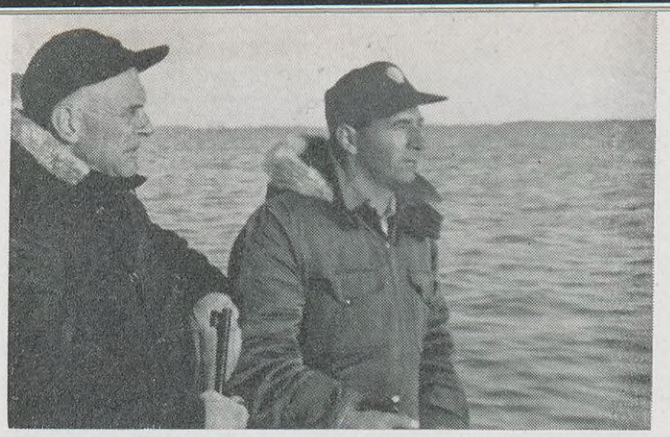
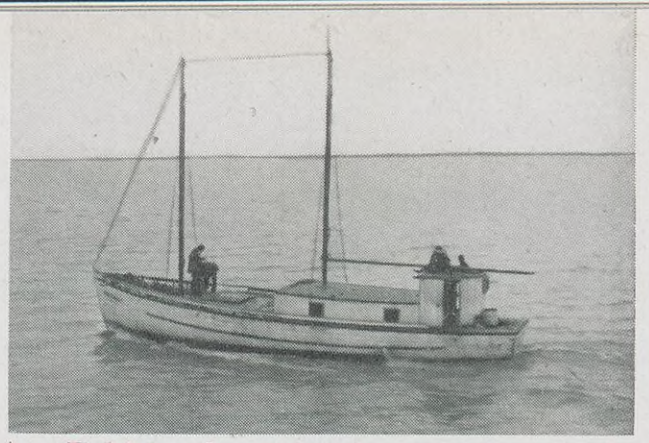
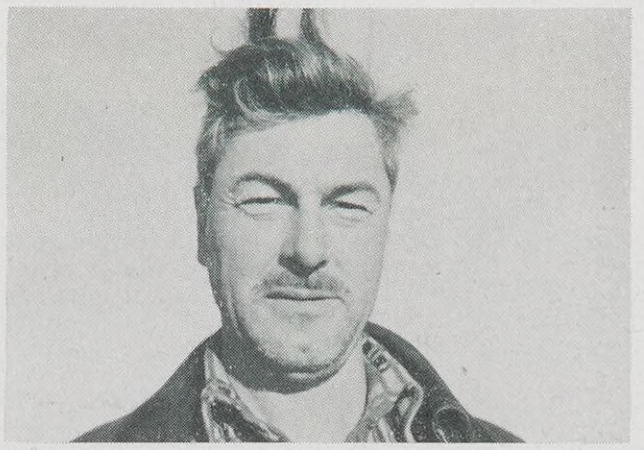


Jimmy Doolittle, left, and Leo Brodeur watch for whales aboard the "Moose," which also served as a home for the visitors. They teamed up to bag a whale during the day's hunt.



An Eskimo boat heads out over a calm Kugmallit Bay. Three boats went out the day these pictures were taken and six whales were shot and captured, two of them by Shell people.



Alex Stefansson invited the Shell people to join the hunt which takes place over several weeks each summer. This Eskimo party usually takes about 30 whales during a season.

A harpoon head is studied by Peary Spaght, right, and Arthur Smith, son of the Eskimo pilot of the "Moose." The harpoons are similar to those used many decades ago by Eskimos.

pilot. Each week the supply plane brings them fresh food, mail and gasoline.

For the geologists, there is another link in the supply chain beyond the field party camp. Every day the helicopter takes them out as far as 50 miles to locations where they can view the terrain and chip at rocks in their search for clues to oil. When their day's work is done, the helicopter swoops them back to the field party camp, set up in tents beside one of the region's myriad of lakes.

A field party's work is carefully calculated in advance because it has only a few weeks in midsummer to work between the thaw and the freeze. In that period, the temperature is usually pleasant, sometimes soaring into the 70's. But the mosquitoes and black flies are so thick that a full beard is standard equipment for all but Eskimos–who seem almost immune to the insects' assaults.

Paul Kartzke, Shell of Canada Vice President of Exploration and Production, and I had visited some of these parties of geologists in the summer of 1957 and, in the process, I received a condensed course in geology.

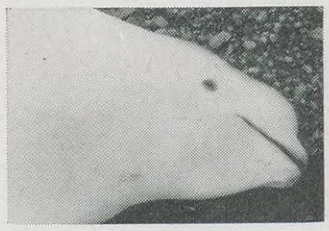
We fished—most successfully—for Arctic grayling and big lake trout. We saw moose and photographed reindeer and wild white sheep.

But the fascination of these remote hills and streams failed to move our imagination quite as much as the lure of the white whales we knew were being hunted by Eskimos just a short hop to the north. Indeed, more than any other one thing, it was the idea of going whaling with the Eskimos that led Kartzke and me to return to that country this past summer.

Getting an invitation to a whale hunt, however, is not simple because Eskimos hunt for food, not sport. We were fortunate in having in our party Max Wopnford, one of the Shell of Canada family who was born in the far north and is a friend of one Alex Stefansson, a leader among the Eskimos. Stefansson, an intriguing man whose father was European and mother Eskimo, spends several weeks every summer hunting the whales with a party of about 50 of his people.

Wopnford arranged an invitation for us to visit the Eskimo camp at Whitefish Station on Kugmallit Bay, northeast of Aklavik. Besides Kartzke and Wopnford, our whaling party included: General J. H. (Jimmy) Doolittle; Richard Kartzke, 13; and my son Peary, 14; and from time to time various Shell of Canada people working with the delta geological parties.

Three boats went out from the camp at Whitefish Station one morning early last August. The permanent ice



ARCTIC WHITE WHALE HUNT continued

A white whale is hauled onto the beach where Eskimo women cut it up for food and leather. A whale yields about two drums of meat and blubber and also leather for slippers, boots and leggings. The main food supply of the Mackenzie delta Eskimos is usually caribou, moose and fish, but whale meat fills out their winter's supply and also provides most of the food for their husky dogs.

pack lay about 25 miles north and the wind off it had subsided so that the ocean was calm and the temperature was near the 60's.

Kugmallit Bay is fed from the southwest by one of the main channels of the Mackenzie River. This bay is ideal for whaling because it is only 10 to 15 feet deep, allowing the hunters to follow a whale's wake.

Looking out over the bay, we could see dozens of whales surfacing and spouting. They usually travel in groups, but when a chase is on they separate. Our boat, the "Moose," cruised at eight knots, fast enough to catch a whale.

As we neared the middle of the bay, the whales were in such numbers that their activities looked like a water carnival. When just playing about, they surface and blow about once in 20 seconds and move at only a few knots. But when they sense pursuit, they can stay down between 30 and 60 seconds and the "Moose" could do little more than keep up with them.

In the hunt, the gunner stands at the bow and waits for the animal to surface. The target isn't large (no more than the back of the whale's head); it can't be seen for more than about two seconds; it is moving and perhaps 75 yards away.

I was too busy with a camera to take a rifle. But nearly everyone else in the party had a shot. Of the three whales taken by our boat, Stefansson took the first. Jimmy Doolittle got the second with a fine assist from Leo

Brodeur, pilot of our Shell Otter. The third went uncontested to Shell's Bill Day. Our largest whale was about 15 feet long and weighed about 1½ tons.

Hitting the whale, difficult and sporting as it is, leaves most of the work to be done. The rifle bullet is supposed only to stun the animal. Then the boat moves in and the traditional harpoon is used. This requires skill, which was amply displayed by Stefansson and Charlie Smith, Eskimo pilot of the "Moose." With the harpoon home, the fight is near the end and a *coup de grâce* is another bullet in the head. As air leaves the lungs the whale sinks, but a floating marker is tied to the animal so it can be found later—and the hunt goes on.

Our meat-hunting type of operation must be a far cry from the one experienced by a lone Eskimo in a kayak. I can imagine him out there alone, needing a whale in the worst way and armed with only a harpoon and a spear or two. First, he had to get close enough to use the harpoon. The furor until the whale tired enough to be speared and killed must have been something to see. One of the old men at Whitefish Station described such hunts. He had seen them but had been too timid to try it himself. (He was anything but a timid man by my standards.)

In Eskimo country, man's work is done when the whale is beached. Women take over then and it is doubtful that a Detroit assembly line ever did a more methodical and streamlined job than their disassembly work. Using sharp knives, two to four women work together and neatly cut off large strips of skin, blubber and flesh.

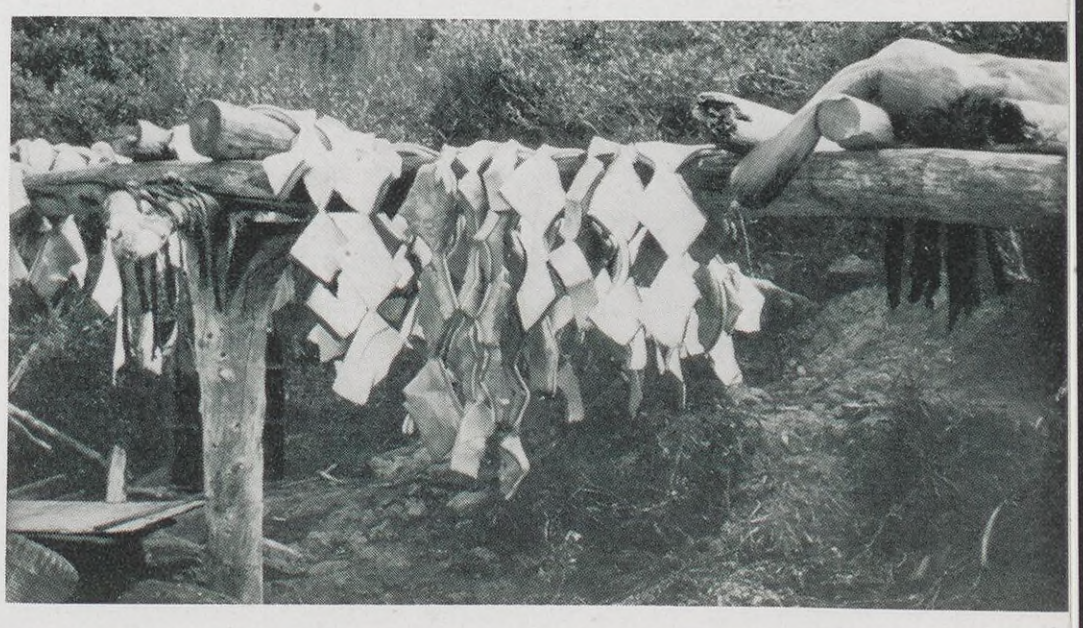
Whale skin has a surprising dual value: it can be cooked to make the Eskimo delicacy "muk-tuk"; or it can be dried and used as leather for shoes and leggings. An average whale also provides about two drums of meat and blubber, which is stored for the winter months. Then it is generally fed to the ever-present husky dogs. But when caribou, moose and fish are scarce, whale meat carries an Eskimo family through the winter.

The three boats at Kugmallit Bay that day last August killed six whales—a good contribution to the Eskimos' goal of 30 for the season. It was midnight when the "Moose" returned to camp, although the sun had barely dipped below the horizon — and then only for a few minutes.

We had seen two challenging situations in the Arctic—the hunt for whales and the hunt for oil. Part of that region is destined to become settled. Perhaps soon transpolar flights across that area may be commonplace and oil pipelines may make a network on the Mackenzie delta beside the Arctic Ocean.

But now the Northwest Territory is far away. It is immense, remote, unspoiled, almost uninhabited. It is a place where a helicopter can put you down in that valley over the next ridge and it is a good bet that no one—unless possibly an Eskimo—has ever set foot there before. To me, these things spell out the great fascination of the Northland today ●

An Eskimo woman begins to cut up a whale. They use sharp knives which are a quarter of a circle, with the periphery the cutting edge. The skin can be used for either the Eskimo delicacy, "muk-tuk" or for leather. The red meat is cut in strips.



Whale skin and blubber are hung to dry before being packed into drums. The stomach, upper right, is blown up, dried and used to store berries collected from nearby fields in the summer season, when the temperature can go up to the 70's.

news and views

TELLING OIL'S STORY

H. S. M. BURNS

H. S. M. Burns, President of Shell Oil Company, said in an article in a recent issue of WORLD PETROLEUM magazine that improving the oil industry's public relations is a job for everyone in the industry.

Mr. Burns commented in the article on the newly-formed Committee on Public Affairs of the American Petroleum Institute, of which he is Chairman of the Board. The Committee on Public Affairs is the result of a merger of the A.P.I.'s former Oil Information Committee and the American Petroleum Industries Committee. The work of the new committee involves both public and governmental relations.

The new committee, Mr. Burns said, can be "counted on to do a better job in governmental and public relations than we have yet seen in our industry." He added, however:

"The basic remedy for all our problems is not a single-shot cure but a constant, never-ending explanation of our complex business, an effort which needs the active and continuing support of every oil man. The old public relations axiom 'never underestimate a man's intelligence, nor overestimate his stock of information,' was never more true than in connection with our industry. Repeatedly, we find that people are not as well informed about our business as we think they are. This is well illustrated by the frequency of investigations into what we consider the elementary aspects of our business. We must do more to remedy this deficiency. The authoritative explanation of fundamentals cannot be left to a handful of public relations men. It is a job for everybody in our great industry."

OUTSTANDING AWARD

Charles E. Weaver, Geologist at Shell Development Company's Exploration and Production Research Division in Houston, recently became the first scientist working in an industrial research laboratory to receive the Mineralogical Society of America Award.

C. E. WEAVER

The award is given each year to an individual under 35 years of age for published results of original research which is considered an outstanding contribution to the Society's fields of interest. Weaver's work, conducted in the E & P Research Division, was concerned with the application of mineralogical and geochemical techniques in oil exploration.

Weaver has a Ph.D. degree from Pennsylvania State University. He joined Shell in 1952, and, after a brief period in the Tulsa Exploration and Production Area, was transferred to Shell Development in Houston.

"You're the kind of man we need around here!"

SHELL PEOPLE in the news

W. F. REED

SHELL OIL COMPANY FINANCIAL ORGANIZATION

W. F. REED has been named Manager of the Insurance Department in Head Office, succeeding H. N. Englander who retired December 31. Mr. Reed, who holds a Bachelor's degree in business administration from Rice Institute, joined Shell in 1940 as a Payroll Clerk at the Houston Refinery. Following various assignments of increasing responsibility, he was named Chief Accountant in the Head Office Financial Accounting Department in 1952. The following year he was named Chief Accountant for the Tulsa Area. In 1955 he became an Assistant Manager of Shell Chemical Corporation's Treasury Department in Head Office. He transferred back to Shell Oil Company as an Assistant Manager of the Insurance Department in Head Office in 1956.

H. A. HAMILTON

SHELL DEVELOPMENT COMPANY

H. A. HAMILTON has been appointed Manager-Treasury at the Emeryville Research Center, succeeding W. R. Balfour who retired December 31. Mr. Hamilton, who holds a Bachelor's degree in business administration from the University of California, joined Shell Oil Company at San Francisco in 1932 as a Clerk. He transferred in 1942 to Shell Development Company as Assistant Office Manager at Emeryville, and was named Assistant Manager-Treasury there in 1952. He was appointed Laboratory Manager at the Agricultural Research Division at Modesto, Calif., in 1957.

A. E. FREEBORN

A. E. FREEBORN has been named Laboratory Manager at the Agricultural Research Division at Modesto, succeeding Mr. Hamilton. Mr. Freeborn joined Shell Oil Company at the San Francisco Head Office in 1936 as a Clerk. Two years later he accepted a similar assignment with Shell Development Company at the Emeryville Research Center. He was named Supervisor of General Accounting at Emeryville in 1949. He accepted employment with Shell Oil Company in 1951 as an Auditor at Head Office. In 1955 he was named Chief Accountant in the Seattle Marketing Division.

P. LIPSCHULTZ

SHELL OIL COMPANY PURCHASING-STORES ORGANIZATION

P. LIPSCHULTZ has been named to the newly-established Head Office position of Manager Commodity-Supply and Statistics. In this assignment, he will be responsible for the assemblage and interpretation of information concerning supply, demand and prices of materials and equipment for the guidance of Head Office and field Purchasing-Stores Departments. Mr. Lipschultz joined Shell at the San Francisco Head Office in 1920 as an Office Boy. He was named Assistant Manager Purchasing-Stores at the Los Angeles Office in 1940. He was appointed Manager Purchasing at the Houston Office in 1951.

Shell Chemical moves to re-align its organization to . . .

INTEGRATED PRODUCT DIVISIONS

By R. C. McCURDY
President, Shell
Chemical Corporation

SHELL Chemical Corporation's organization has developed largely in terms of the company-wide functions of manufacturing and marketing. As of January 1, 1959, basic steps were taken which will lead to an organization based completely on lines of products, each with its own integrated manufacturing, marketing and supporting facilities.

Thus, operating authority and responsibility has been placed in the hands of integrated divisions, each engaging in one of the broad lines of business pursued by our Corporation. Initially, there are five such divisions —Ammonia, Agricultural Chemicals, Synthetic Rubber, Plastics and Resins, and Industrial Chemicals.

This change reflects the continually increasing diversity of Shell Chemical's activities. This diversity has resulted from the pursuit of attractive ventures within the various groups of business known collectively as the chemical industry; it has not been sought as an objective in itself.

Also reflected in the change is the fact that in an increasing number of the Corporation's lines of business, certain functions (notably marketing and manufacturing) are highly and continually interdependent. This situation generates a large flow of multifunctional problems peculiar to a particular line of business, which require close management attention.

We consider it likely that both of these trends will continue, so that need for a product division type of organization will increase.

Although the need today for a change was not unduly pressing, it appeared that the time had been reached when the probable short-term gains would equal, or outweigh, the probable losses.

In the contemplated arrangement, the Head Office organization will be substantially reduced in size as a result of the transfer of people and line operating authority to the divisions. It is anticipated that the Head Office will be concerned mainly with such matters as: those outside the sphere of activities of the various divisions; those involving more than one division; and those of interest to the Corporation generally. However, members of Head Office Management may be designated as the Corporation's advisors in one or more functional lines —such as manufacturing and marketing—in addition to their other duties.

The product groupings for the five divisions will be mainly along the lines of the subdivisions that have existed within our Corporation. Their general spheres of initial activity, and corresponding major facilities, can be summarized as follows:

1. Ammonia Division — this has been and will continue as an integrated operation including the Shell Point and Ventura Plants.

2. Agricultural Chemicals Division —engaging in lines of business previously represented by the Agricultural Chemical Sales Division. This Division has taken over the Denver Plant.

3. Synthetic Rubber Division—engaging in lines of business previously represented by the Synthetic Rubber Sales Division. This Division has taken over the Torrance Plant and Torrance Research Laboratory.

4. Plastics and Resins Division—has taken over activities in epoxy resins, bisphenol and phenol, the Riverton, N. J., plant site and the work on plastics ventures now being considered. We anticipate that appropriate portions of the Houston Plant's operations will be programmed and functionally supervised by this Division, with actual operations being executed by the plant personnel under an interdivisional operating agreement. The Division also, for the present, receives an allocated share of the work of the Houston and Torrance Research Laboratories.

5. Industrial Chemicals Division—has taken over the Houston, Norco, Dominguez and Martinez Plants and the Houston Research Laboratory, and is engaging in the general lines of business previously represented by the Chemical Sales Division (with the exception of Plastics and Resins).

As a first step in putting the new organizational plan into operation, the following assignments have been made effective January 1:

As Vice Presidents in the Head Office Management: B. M. Downey, previously General Manager—Manufacturing Operations; G. W. Huldrum, Jr., previously Manager of the Chemical Sales Division; C. W. Humphreys, previously Vice President — Manufacturing; G. R. Monkhouse, previously Vice President — Ammonia Division.

As General Managers of the Product Divisions: Plastics and Resins, M. Buck, previously Assistant to the President; Synthetic Rubber, J. P. Cunningham, previously General Manager of the Synthetic Rubber Sales Division; Industrial Chemicals, A. W. Fleer, previously General Manager—Manufacturing Technical; Agricultural Chemicals, S. H. McAllister, previously Manager of the Agricultural Chemical Sales Division; and Ammonia, L. M. Roberts, previously Operations Manager in the Ammonia Division.

The Shell careers of those appointed are as follows:

B. M. Downey

B. M. Downey started his Shell career in 1925 in the Laboratory at the Shell Oil Martinez Refinery. In 1931 he was transferred to Shell Development Company as a pilot plant operator at the Emeryville Research Center and later that year joined Shell Chemical Corporation at the Martinez Plant. He became Chief Operator at Martinez in 1934 and two years later was transferred to the Dominguez Plant. He was named Superintendent there in 1941 and later that year returned to the Martinez Plant in a similar capacity. He returned to Dominguez in 1943 and was named Plant Manager in 1946. That same year he moved to Houston as Manager of the Houston Plant and was in charge of that location while several major expansions were undertaken. In 1954 he became Manager—Manufacturing at Head Office and in 1956 was appointed General Manager —Manufacturing Operations.

G. W. Huldrum

G. W. Huldrum, Jr., first joined Shell Chemical Corporation in 1937 for summer work as a Relief Tester at the Shell Point Plant. After completing his studies at the University of California, he returned to Shell Point in 1939 as a Chemist. In 1943 he became a Technologist and in 1945 was transferred to the Cactus Ordnance Works at Dumas, Texas. Later that year he was named a Technologist in the Head Office Marketing Department. In 1946 he became Senior Technologist in the former Eastern Marketing Division Office at New York and in 1947 opened the Detroit District Office as District Manager. He was named Manager — Agricultural Products of the former Western Marketing Division in 1949 and Sales Manager of the Division in 1952. Later that year he returned to New York as Sales Manager of the Eastern Division and in 1954 was named General Sales Manager in Head Office. He became Division Manager of the Chemical Sales Division in 1956.

C. W. Humphreys

C. W. Humphreys, who holds a Ph. D. degree in Chemistry and Engineering from Stanford University, joined Shell Chemical Corporation in 1931 as a Laboratory Assistant at the Shell Point Plant. In 1934 he was named Chief Chemist at the Martinez Plant. The following year he moved to Dominguez as Assistant Superintendent and participated in the construction and operation of the Corporation's first plant built in Southern California. In 1941 he was placed in charge of the Dominguez Plant and later that year moved, in a similar capacity, to the new plant being erected at Houston. In 1946 he was assigned to Head Office as Manager of Manufacturing Operations. He transferred to New York in 1948 when the Head Office was moved from San Francisco. After various assignments in the Manufacturing Organization, he was elected Vice President—Manufacturing in 1953.

G. R. Monkhouse

G. R. Monkhouse, a graduate of Wellington College, England, joined Shell Oil Company in 1929 as a Salesman at St. Louis, after eight years of experience with associated companies outside the United States. After serving in various positions of increasing responsibility in the Marketing Department, he was named Manager of the former Atlantic Marketing Division at Hartford, Conn., in 1937 and later served as Manager of the Boston and Minneapolis Divisions. Following a military leave of absence during World War II, he joined Shell Chemical Corporation in 1945 as General Manager of the former Eastern Marketing Division at New York, and three years later became General Manager of the former Western Division at San Francisco. In 1952 he was named Vice President of the Western Marketing Division and two years later became Vice President of the Ammonia Division, the Corporation's first integrated division.

INTEGRATED PRODUCT DIVISIONS continued

Martin Buck

Martin Buck, who holds a B.S. degree in chemical engineering from the University of Illinois, joined Shell Oil Company in 1930 as a Chemist at the Wood River Refinery. He transferred to Shell Development Company as a Technologist in 1940. In 1942 he joined Shell Chemical Corporation as Manager of Development and Engineering at San Francisco. He was named Manager of the Manufacturing Development Department in 1946 and Assistant to the Vice President Manufacturing in 1949. After several other Head Office assignments, in 1955 he accepted employment with B.P.M. in the Netherlands, where he became Manager of the Chemical Plants Department. In 1958 he was named Assistant to the President of Shell Chemical Corporation.

J. P. Cunningham

J. P. Cunningham, who holds a Ph.D. degree in chemistry from Princeton University, joined Shell Development Company in 1937 as a Research Chemist at the Emeryville Research Center. After an assignment with Shell Oil as a Technical Assistant at the Martinez Refinery in 1940, he returned to Shell Development as a Research Chemist at San Francisco and in 1942 transferred to New York as a Chemical Engineer. He joined Shell Chemical Corporation in 1946 as Assistant to the Vice President Manufacturing at Head Office in San Francisco and two years later became Assistant to the Vice President Marketing. He was named Manager of Shell Chemical's Chicago Marketing District in 1950, Manager of the Head Office Solvents Department in 1951, and Manager of the former Product Development Department in 1952. In 1955 he became Manager of the Synthetic Rubber Sales Division at Torrance.

A. W. Fleer

A. W. Fleer, who holds a Ph.D. degree in chemical engineering from the University of Michigan, joined Shell Oil Company in 1935 as a Technologist at St. Louis. In 1941, he joined Shell Development as a Technologist in the San Francisco Office. He was made Technical Assistant in 1943 and in 1944 became Assistant to the President. He joined Shell Chemical in 1949 as Manager of the Manufacturing Development Department in Head Office. He later held positions as Manager of Manufacturing Engineering and of Manufacturing Operations, and in 1954 was appointed Manager of Research, Development and Engineering. He became General Manager—Manufacturing Technical in 1956.

S. H. McAllister

S. H. McAllister, who holds a Master's degree in Chemistry from Stanford University, joined Shell Development Company in 1930 as an Assistant Chemist at the Emeryville Research Center. He became a Research Chemist in 1934 and three years later was made Department Head of the Products Application Department. In 1942 he was appointed Associate Director in Charge of Process Development in Pilot Plants. From 1946 to 1955 he acted as Associate Director in charge of Petroleum Technology and then was named Director of Shell Development's Agricultural Research Division with laboratories at Denver, Colo., and Modesto, Calif. Upon completion of the expanded facilities at Modesto, he served there briefly and later that year joined Shell Chemical as Division Manager of the Agricultural Chemical Sales Division.

L. M. Roberts

L. M. Roberts, who holds a Bachelor's degree in civil engineering from the University of California, joined Shell Chemical Corporation as an Engineer at Shell Point Plant in 1934. He was named Plant Supervisor of the Operating Department there in 1938 and three years later was appointed Head of that Department. He became Superintendent in 1942 and the following year was named Plant Manager at the Shell-operated Cactus Ordnance Plant. He was appointed Assistant Manager of Development and Engineering at the former San Francisco Head Office in 1945, and became Manager of the Manufacturing Engineering Department in 1946. In 1951 he was named Manager of Manufacturing Operations at Head Office and the following year was appointed General Manager —Manufacturing. He became Operations Manager of the Ammonia Division at San Francisco in 1954.

AT HOME WITH HISTORY

A Shell Man Buys Naturalist's Home To Restore as Historical Landmark

AFTER three years of painstaking work on a do-it-yourself project, H. V. Sax figures he has seven more to go before he re-creates part of California's history to his own satisfaction.

Sax, Shop Supervisor in the Martinez Refinery's Engineering Department, and his wife, Faire, bought a dilapidated, 16-room mansion in 1955. It was built 78 years ago and was the home of the late John Muir, noted naturalist and author.

The Saxes' aim: to restore the house as a historical landmark.

Muir, who died in 1914, is honored as the man most responsible for Yosemite and Sequoia National Parks being set up in 1890 by the Federal government. His nature studies took him on many journeys through the western states and Canada. He also travelled to Alaska, the Arctic, Siberia, Manchuria, Japan, India, Australia and Egypt, and contributed articles on his findings in those countries to leading periodicals. He wrote several books on his experiences.

Both Sax and his wife are active members of the John

Standing in front of the 78-year-old home of the late John Muir, famed naturalist, is Shop Supervisor H. V. Sax of the Martinez Refinery. He bought the house in 1955 and is still working to restore it as a historical landmark.

On a hill near the Martinez Refinery stands the stately John Muir mansion. Built in 1882, the house had been neglected since Muir's death in 1914. Sax expects to spend a total of 10 years refurbishing the old home.

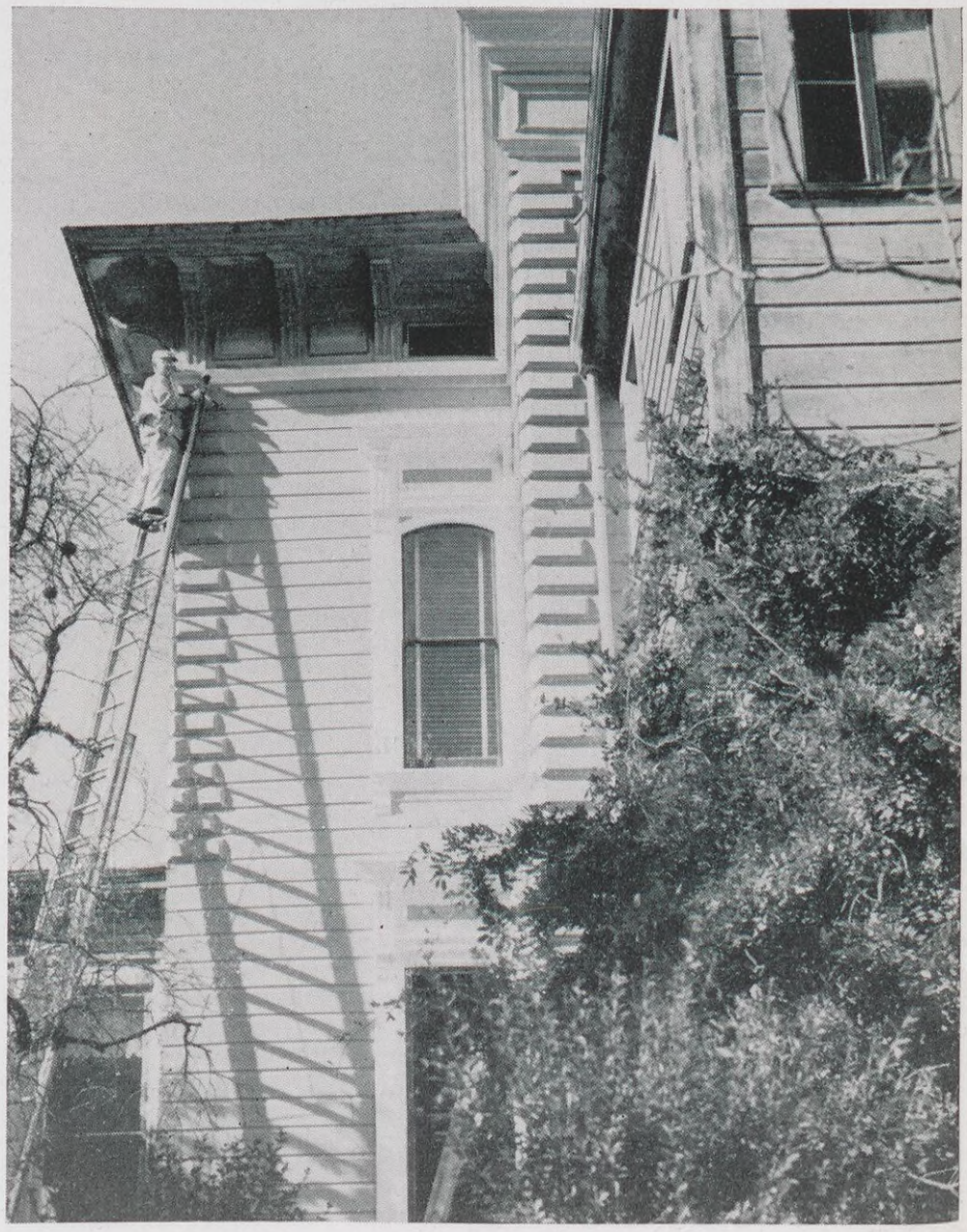
AT HOME WITH HISTORY continued

Muir Memorial Association. They first became interested in the Muir House—located on a hill near the refinery—while Mrs. Sax was a member of a group trying to persuade the state to buy the 4½-acre site and restore the home. When that project failed, the Saxes bought the place themselves.

Sax then announced a standing offer to sell the house to the state or to the Muir Association for the price he paid, plus the cost of materials used in restoring it. His labor would be free. (Two years ago the state legislature passed a bill to buy the mansion, but the Governor, for economy reasons, pocket-vetoed it.)

Though several persons owned the home after Muir's death, none did much to maintain it. Paint was not applied for 36 years, the wiring was a fire hazard and

Atop his 40-foot ladder, Sax works to restore the Muir house to its original colors of gray and white with red trim. The job requires many hours of scraping where the old paint "alligatored" in the 36 years since the house last was painted.



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bats infested the pumphouse. Vandals speeded deterioration by ripping out marble washbasins, destroying parts of fireplaces and taking window shutters. (Even after the Saxes moved in, the house was robbed seven times, costing Mrs. Sax her jewelry and Sax a rifle and tools.)

Sax was ready for the mammoth refurbishing task because his job with Shell and his hobbies helped him learn the crafts necessary for such work. During the first year of the restoration project he uncovered some unexpected tenants—five colonies of bees. Their combs yielded five quarts of honey and Sax let two of the hives keep their quarters.

"We don't get in their way and they don't get in ours—yet," he said.

Next, Sax started restoring and repainting the redwood siding.

"The siding is in good condition but the old paint has alligatored into bumps and valleys as hard as flint. I clean and scrape for eight hours and then paint for 15 minutes."

Sax thinks it will take three more years during his spare time just to restore the outside of the house with its harbor gray siding, white sash and red trim. After that, four years will be spent patching the plaster walls, refinishing the fir floors; restoring the marble fireplaces (to specifications set by the State Historical Society); and replanting the home's gardens to appear as they did half a century ago. In addition, all rooms will be painted and decorated just as Muir's daughter, Helen Funk Muir of Spokane, Wash., described them to the Saxes when they visited her recently.

Hundreds of persons have visited the Muir home since the Saxes moved in. Mrs. Sax has scheduled regular tours three times a week but she often shows out-of-town visitors around when they come unexpectedly. When the house is completely restored, it will be opened to the public daily.

The mansion will look about the same as it did 50 years ago, but visitors will note a recent addition to the kitchen—a modern stove. The original one still functions perfectly but Sax said "you can't get the thing going fast in the morning."

"The wood burner just couldn't get me to work on time!" ●

The story of John Muir and his many travels is told by Mrs. Sax to a group of visiting Cub Scouts and Bluebirds. School children, as well as hundreds of adults, visit the Saxes each year to see the place where the famed naturalist once lived.

Guiding a visitor through her historical house, Mrs. Sax, right, tells about an old piano she acquired which is typical of the ones used in Muir's day. Mrs. Sax schedules tours of her home three times weekly, but plans to open it to the public daily when it has been completely restored.

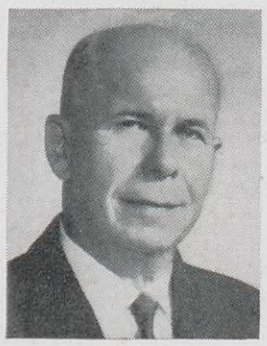
They have RETIRED

L. V. STECK

L. V. STECK, Vice President Marketing, Shell Chemical Corporation, retired December 31, after 28 years of Shell service. Mr. Steck, who holds a Bachelor's degree in chemistry from the University of California, joined Shell Development Company in 1930 as a Research Chemist at Emeryville Research Center. In his early years with Shell, Mr. Steck was involved in work which led to the first commercial production of MEK, iso-octane and synthetic acetone.

He became an Assistant Director of Shell Development Company in 1938, and four years later was elected Vice President Marketing of Shell Chemical Corporation. In 1941, Shell Chemical's sales were $9 million; under Mr. Steck's guidance, a sales organization has been developed to handle sales that grew to $202 million in 1957.

A pioneer in the commercial development of materials manufactured from natural gas and cracked petroleum gases, Mr. Steck was awarded the Commercial Chemical Development Association Medal in 1954 for "outstanding accomplishments in the field of commercial chemical development."



G. V. BIRKINSHAW

G. V. BIRKINSHAW, Manager of the Portland Marketing Division, retired December 31 after 36 years of service. Mr. Birkinshaw joined Shell Oil Company in 1922 as a Clerk at Seattle, Wash. Following assignments as Manager of three Marketing Districts in the Portland Division, he was named Manager of the former Intermountain, and Oakland Marketing Divisions in 1937 and 1941 respectively. He was appointed in 1942 to the position he held at retirement.

J. CHALMERS

J. CHALMERS, on Special Assignment from Head Office Exploration and Production since August, 1958, retired December 31, after 25 years of Shell service. Mr. Chalmers, who holds a Bachelor's degree in petroleum engineering from the University of California, joined Shell in 1933 at Houston as an Exploitation Engineer. In 1938 he accepted a two-year assignment at The Hague, and upon his return was named a Senior Exploitation Engineer at Houston. He was appointed Regional Exploitation Engineer there in 1946. In 1951 Mr. Chalmers was named Manager of the Technical Services Division at Houston and in 1955 became Manager of the Production Technical Services Division there.

P. W. ENGELS

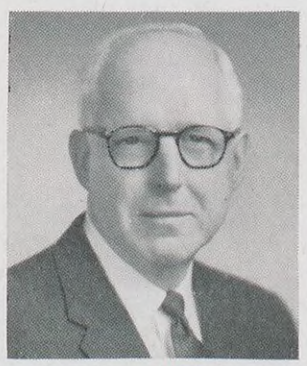
P. W. ENGELS, who was Assistant Manager and Manager of the Head Office Marketing Operations Department for 17 years, retired December 31, after 36 years with the Company. Mr. Engels, who holds a mechanical engineering degree from Dordrecht Technical School in the Netherlands, joined Shell at St. Louis in 1922. After various engineering assignments of increasing responsibility, he was named Plant Manager in the Head Office Operating Department in 1931, and in 1940 he was appointed Assistant Manager of Marketing Operations at Head Office. He became Manager of Marketing Operations in 1942.

H. N. ENGLANDER

H. N. ENGLANDER, Manager of the Insurance Department in Head Office for 19 years, retired December 31, after 46 years of service with Shell. Born in London, England, he joined Shell in the United States in 1939. He has since earned an outstanding reputation throughout the insurance world as an authority in the field of petroleum industry risks and coverage. At the time of his retirement, Mr. Englander had more years of service than any other active Shell employee.

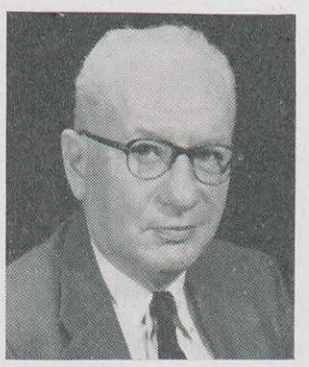
M. VOOGD

M. VOOGD, former Manager of the Shell Chemical Corporation Torrance (Calif.) Plant, retired December 31, after 29 years of service with Shell. Born in the Netherlands, Mr. Voogd, who holds a degree in chemical and physical engineering from the University of Delft, joined Shell in the United States in 1936 as an engineer at the Shell Point Chemical Plant, and in 1943 he was named Plant Manager there. He was Manager of the Special Chemicals Department in Head Office before being transferred to the Torrance Plant in 1950. At the time of his retirement he was on a special assignment in Europe.



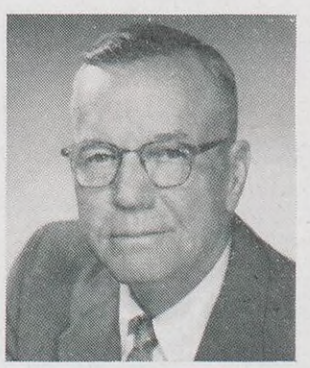
M. R. CHURCH
Denver Area
Production

M. J. COONEY
Tulsa Area
Gas

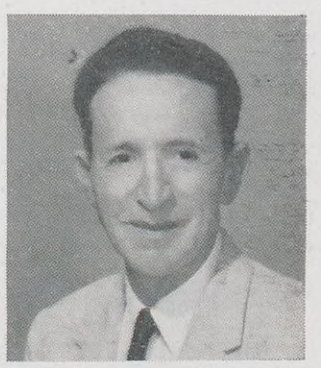


L. M. DEWALD
Indianapolis Division
Operations

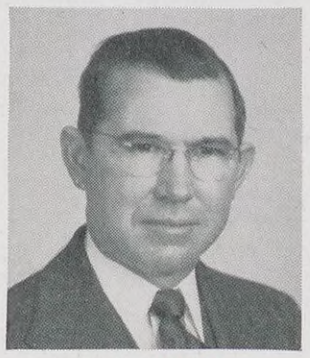
M. W. ELLIOTT
Wood River Refinery
Engineering



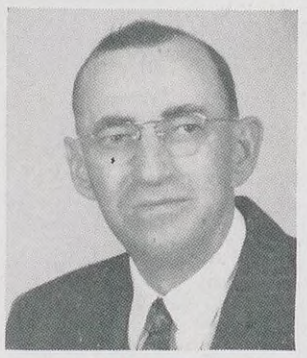
L. H. HANKER
Pacific Coast Area
Production



L. E. HENTON
Pacific Coast Area
Production

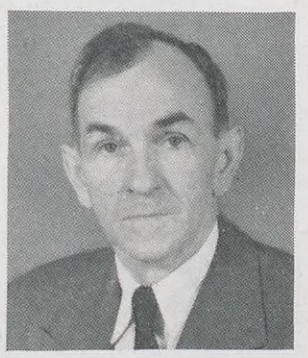


R. V. HERMAN
Shell Pipe Line Corp.
Mid-Continent Division

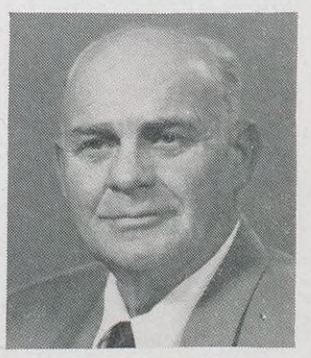


O. W. HOLLINGSWORTH
Midland Area
Gas

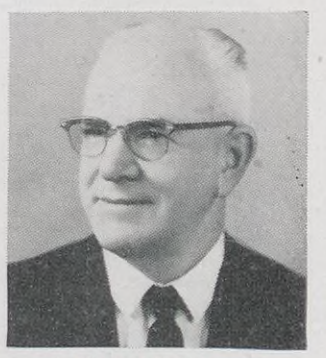
M. E. HOPKINS
Tulsa Area
Production



G. E. JONES
Wood River Refinery
Engineering



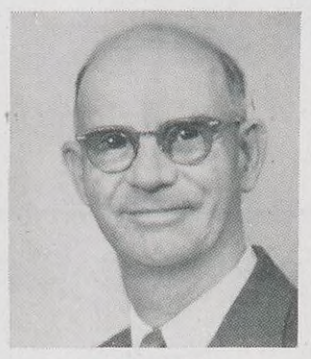
C. C. KOEHNE
Tulsa Area
Production



N. B. LOWELL
Sacramento Division
Sales

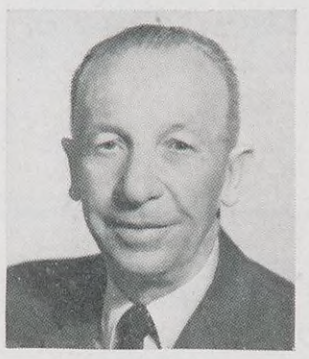
R. W. MATSLER
Pipe Line Dept.
St. Elmo, Ill.

W. W. NALL
Tulsa Area
Production



F. R. PINK
Wood River Refinery
Engineering

R. J. RINER
Wood River Refinery
Engineering



E. TIESLAU
Sacramento Division
Sales

J. W. WORTH
Houston Refinery
Refinery Laboratory

Shell Oil Company

January — 1959

Vice President
R. W. Bond

Manager Exploration
J. W. Inkster

Manager Legal
P. H. Howard

Manager Land
R. H. Blakely

Executive Assistant
R. L. Trott

Area Geologist
J. M. Maxwell

Area Geologist
E. C. Taber, Jr.

Area Geophysicist
R. F. Christy

Area Land Agent
H. Dickson

Area Land Agent
A. L. Egnew

Area Land Agent
V. S. Roberts

Manager Transport
W. H. Esser

Representative Crude Oil
C. A. Nyhof

Manager Purchasing-Stores
C. G. McLaren

Senior Geologist
J. B. Leiser

Senior Geologist
H. L. Rickard

Senior Geologist
W. L. Wilgus

Senior Geologist
F. T. Connolly

Area Stratigrapher
R. V. Ward

Division Geologist Kansas
K. A. Keenmon

Div. Exploration Manager North Texas
J. H. Pittinger

Div. Exploration Manager Oklahoma
G H.Thompson,Jr.

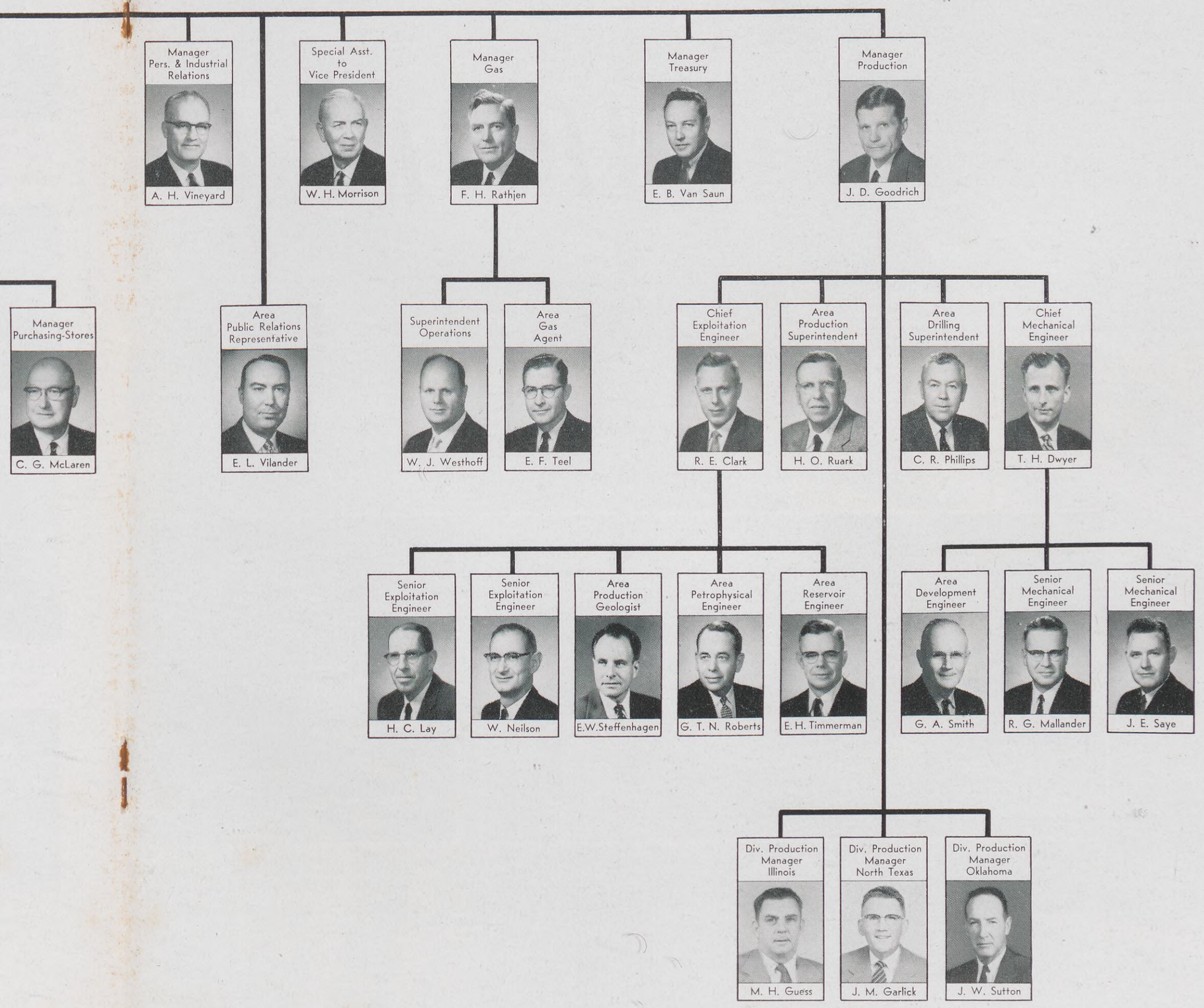
District Geologist Evansville
T. P. McCann

Division Land Manager Kansas
D. W. Wise

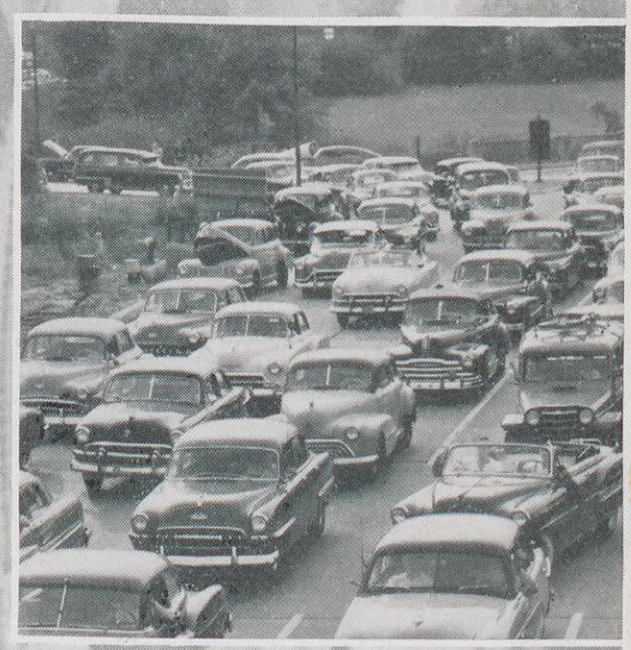
Division Land Manager North Texas
B. H. Kouns

Division Land Manager Oklahoma
J. F. Cheadle

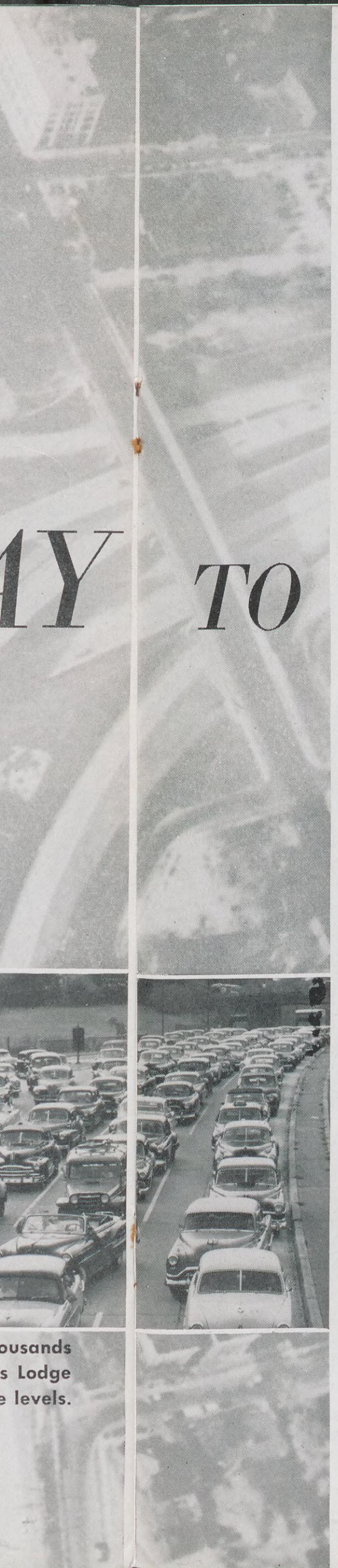
Tulsa Exploration and Production Area Organization



HIGHWAY



The evolution of motordom, from a few vehicles on a bumpy jaunt in the 1900's (left), to thousands of holiday drivers moving along a parkway (right), demanded such modern systems as Detroit's Lodge Interchange (above), which allows uninterrupted traffic to flow on 14 non-crossing roadways using three levels.



ousands
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Coast to Coast and border to border,
the U. S. is in the midst of its greatest road-building program to give Americans a . . .

MY TO EVERYWHERE

FIFTY-SEVEN million cars were registered in the United States last year and the forecast is for 100 million by 1972. Unless new highways are built, the flood of vehicles could bring a revival of the old joke about the farmer who told the bewildered motorist:

"You just can't get there from here!"

The Federal and state governments recognize the problem and have launched a road-building program which is the biggest public works plan ever undertaken by man. It is 30 times as big as the building of the Panama Canal, the Grand Coulee Dam and the St. Lawrence Seaway—all put together.

Its cost is also tremendous and estimates of the final bill have made some surprising jumps. For example, the cost of an Interstate highway system was forecasted at $27 billion in 1956 and when the plan was reviewed in 1958 the cost leaped to $40 billion.

The 41,000-mile Interstate system—known officially as the National System of Interstate and Defense Highways—is the major part of the program. But there is also another, although secondary phase: the improvement of at least 78,000 miles of Federally-aided state roads—known as the ABC program (which has been in existence in various forms since 1916).

The work involved in the road building is expected to have wide-ranging social and economic effects somewhat comparable to those experienced with the introduction of automobiles. It is expected to benefit many major industries. The petroleum industry should soon begin to feel the effects of the program just as it did at the turn of the century when automobiles started to use what were large amounts of fuels and lubricants in those days.

To meet problems of increased traffic, Congress passed Federal-Aid Highway Acts in 1956 and 1958. As a result of these Acts, Federal funds for the highway programs were sharply increased and the Federal Government assumed 90 per cent of the cost

(Highway photos courtesy of International Road Federation, American Road Builders Association and Ford Motor Company)

This limited access four-lane highway, U. S. 80, near Dallas, Tex., is typical of what most of the Interstate system will look like. The highways, five times safer than old-style roads, will be mainly six or four lanes, depending upon traffic needs.

of the Interstate program. These Acts also provided for a substantial increase in financing authorizations for the ABC roads, on which the Federal and state governments split the cost.

Total cost of the highway programs—including primary, secondary and urban roads—is estimated at $70 billion, with the Federal Government's share $36 billion for the Interstate system and about $15 billion for the ABC roads—a total of about $51 billion, to be provided by the Federal Government by 1972. The remaining $19 billion will come from the states.

How will the money be raised, particularly since the jump in cost from $27 billion to $40 billion? Road-user taxes—such as the Federal and state taxes on gasoline, automobiles, trucks and tires—totalled in 1957 about $8 billion—$4½ billion from state taxes and $3½ billion from Federal taxes. If all these taxes on highway users went into road-building, this revenue would more than meet the costs. But the Federal government and about half the states divert substantial percentages of these taxes to other than highway uses. These tax problems and how they relate to financing the highway programs now are being discussed widely in government and industry. (See statement by W. F. Kenney, Vice President and General Counsel, Shell Oil Company, on page 23.)

So far, the motoring public has seen little of the benefits of the Interstate system—and will not for several years—but about 12,000 miles of Interstate highways are in various planning and preliminary-construction stages. (About 25 per cent of the Interstate system involves improving old highways.)

Under the long-standing ABC program, 42,000 miles have been improved since June 1956, and 36,000 more are being worked on currently.

The completed Interstate system will carry about 20 per cent of all traffic and constitute about one per cent of the 3⅓ million miles of U. S. roads and streets. The Interstate and ABC systems together will accommodate about 75 per cent of all traffic and make up about 25 per cent of total mileage. (City streets and so-called "back" roads—which total about 2,500,000 miles—are not part of either Federally-aided program.)

The benefits of the Interstate and ABC programs will reach far and wide. Immediately affected are those who construct roads or supply mate-

A claw of spans, reaching from the California hills, leads onto Carquinez Bridge. The valley in the background was scooped out for the highway.

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rials for construction. Here are a few of the authoritative forecasts on what the job will require:

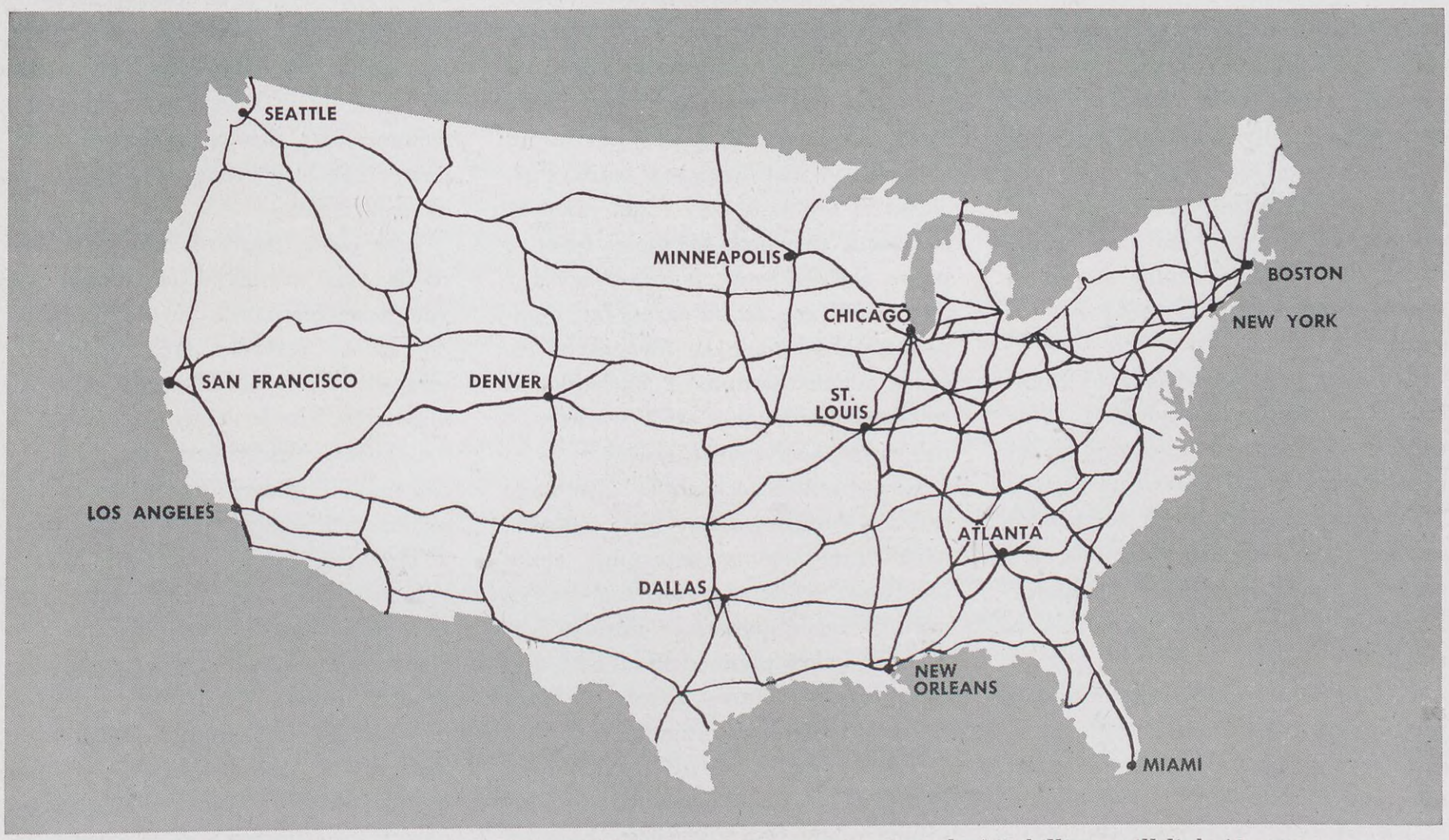
- More than 400,000 men employed on construction in the peak road-building years planned for the mid-1960's.
- Fifty million tons of steel for bridges, clover leaf exchanges, railroad crossings and signs.
- One million machines—from trucks to earthmovers—in addition to those already working on road-building.
- A billion gallons of gasoline and lubricants during each of the peak years to power and lubricate the machines.
- About 150 million barrels of the oil industry's asphalt annually during the peak years—about twice the current road-building needs. Conservative estimates are that asphalt will be used for about half the road surfaces and portland cement for the rest. (The amount of portland cement needed also is expected to double.)

The need for gasoline, lubricants and asphalt indicate that the oil industry's — and Shell's — stake in the highway programs is important. Shell now sells a significant volume of all asphalt used in the U. S. Shell also has an important stake in the market for fuels and lubricants used by road construction equipment.

But the highway programs have an even greater significance for Shell and the oil industry. This will result from the use of fuel and lubricants by cars and trucks driven on the new roads. By 1972, gasoline sales are expected to increase by about 60 per cent as a result of an estimated 85-per-cent increase in the number of passenger cars, and a 50-per-cent increase in the number of trucks. While over-all gasoline consumption will go up, the average car will use less fuel because more families will have more than one car and the number of small cars will increase.

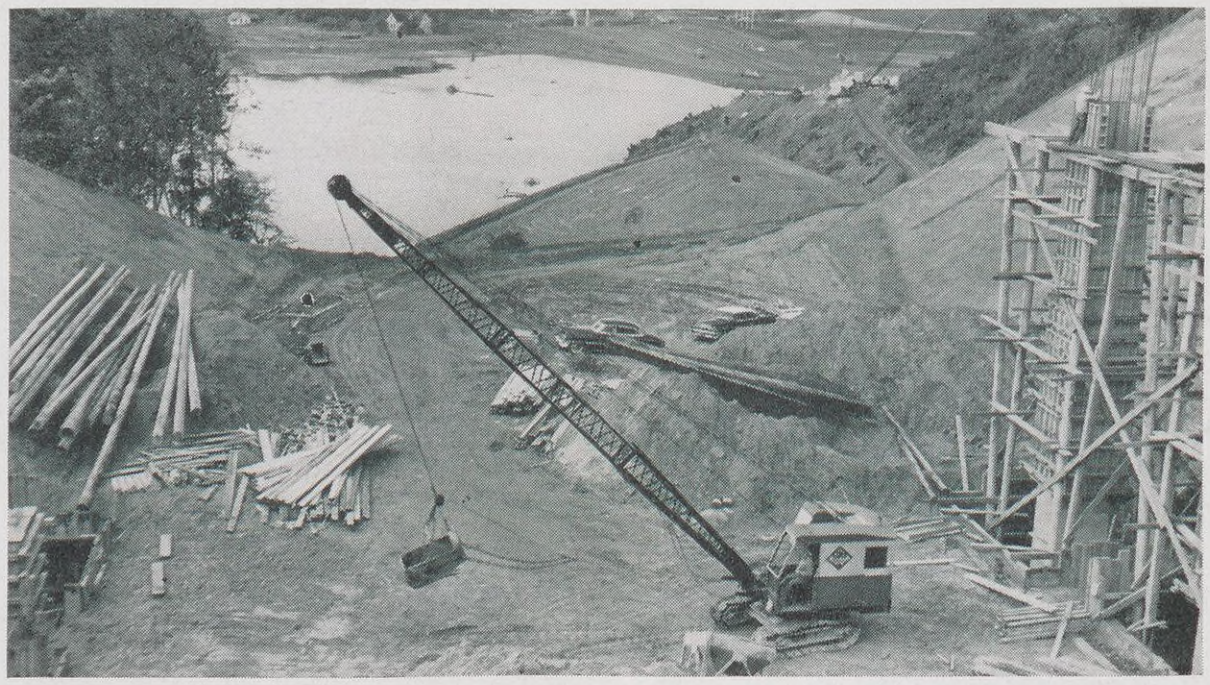
The expected increase in car and truck registrations requires oil companies to plan now for future growth in product demand. All phases of the industry — from production through marketing—will be affected.

Of immediate practical concern to both motorists and those who market gasoline, is the location of service stations—particularly on the new Interstate system of limited-access expressways. Some planning authorities favored building a limited number of service stations along the right-of-way



The National System of Interstate and Defense Highways—costing approximately $40 billion—will link 48 states connecting 90 per cent of all U. S. cities with populations greater than 50,000. Though comprising less than one per cent of the country's road mileage, the system will carry 20 per cent of all traffic. So far, about 12,000 miles are completed or under construction.

Improving roads, such as this work on the Housatonic Bridge in Massachusetts, will account for about 25 per cent of Interstate roads.



Construction problems, even under such tough conditions as crossing Capitol Lake near Olympia, Wash., are solved by modern engineering techniques. These include aerial mapping, measuring subsurface formations with seismometers and using electronic computers, all of which cut preconstruction time significantly.

HIGHWAY TO EVERYWHERE continued

of these new roads and leasing them to highest bidders, as is now done on several toll roads. Associations representing suppliers of gasoline, and gasoline jobbers and dealers, pointed out the monopoly dangers inherent in such a system. Motorists' freedom of choice could be limited to one brand of gasoline and the conditions under which the service stations would be operated might be dictated by the states.

Congress was impressed by these considerations and provided that no service stations may be located on the right-of-way of the Interstate system. This leaves the way clear to develop service station facilities, motels, restaurants and other services the motorist needs on access and other adjacent roads.

Meanwhile, the job of planning and preliminary construction of the Interstate roads moves ahead. In planning, one major problem is deciding a highway's route. This involves, among other factors, investigations including interviews (10 million motorists have been questioned), surveys of driving habits, and analyses of drivers' needs.

Once the route has been selected, land for the road must be acquired. Some of the new highways will be built over existing roads but about 75 per cent will blaze new trails. Purchase of rights-of-way often involves law suits, in which the states have to prove the highway is necessary for public welfare. In all cases, fair compensation is made to owners of divided farms, disrupted businesses and relocated homes that always follow in the wake of any new highway.

Construction techniques also have become complex. They now include: aerial mapping to determine route locations; sensitive measuring devices such as seismometers to analyze formations below planned roadbeds; and electronic computers to solve difficult design problems in minutes.

These complexities of building more and better roads, along with the magnitude of the job and rising costs of materials and labor, all increase the construction bill.

But highway officials say the new roads will help save money in some cases for those who use them. The savings for the average motorist, they say, will be in lower fuel and maintenance costs, slower car depreciation, longer tire and brake life, and lower insurance rates.

New safety features built into the roads also are expected to cut the annual accident bill. Included among the safety features are limited accesses, wide lanes and spacious dividing strips. The President's Committee for Traffic Safety says such factors can make highways five times as safe as old-style roads.

The long range goal is to have a system which will give Americans the opportunity to go almost anywhere in the country without stopping at a red light — and, once there, to have fine roads locally. When that day comes, possibly in the 1970's, motorists who are always looking for new vistas will have even greater incentive to seek them on the "highway to everywhere."

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HOW CAN WE PAY FOR OUR HIGHWAYS?

BY W. F. KENNEY
Vice President and General Counsel, Shell Oil Company

W. F. KENNEY

HOW we were to pay for a $27 billion Interstate Highway System was the most pressing problem before Congress when it passed the Federal Highway Act of 1956. Today, revised estimates have pushed the projected cost of the program to $40 billion. Federal and state policy on gasoline taxes—which pay a big share of highway costs—has reached a crossroads.

On a national average, gasoline taxes now add 40 cents to every dollar the motorist spends for gasoline. Since World War II, gasoline taxes have risen faster than either the wholesale or retail prices of gasoline. The Federal tax on gasoline now is three cents a gallon; state taxes average nearly six cents a gallon. This makes a total of nine cents a gallon.

Recommendations will probably be made to Congress this year to increase the Federal gasoline tax, possibly as much as two cents a gallon. This increase is being suggested as a means to cover an imminent deficit in the Highway Trust Fund for the Interstate system; the deficit results from the estimated costs of the program having zoomed to $40 billion.

Looking beyond 1962, we can see on the horizon even further deficits in the Trust Fund which might require a second two-cent increase in the Federal gasoline tax, if gasoline taxes alone are to be regarded as a means of covering these deficits. This would bring the Federal tax alone to seven cents a gallon. Adding the present state taxes, this would make the total tax on gasoline almost 13 cents a gallon; and that is without considering threatened increases in state gasoline taxes to cover the states' share of the cost of the program.

With these facts in mind, it is little wonder that C. R. McMillan, President of the American Association of State Highway Officials, said recently that "the Federal-state motor fuel tax combination may be approaching the point of diminishing returns."

If additional taxes result in prices that bring a cut in gasoline purchases who will be the gainer? Oil companies and service station dealers will lose sales; the motorist will lose by being obliged to curtail his driving or buy a lightweight, less convenient car designed primarily for fuel economy; and the taxing authorities will not gain from a higher rate on reduced volume of revenues. This has been the experience in European countries where taxation has made gasoline a luxury.

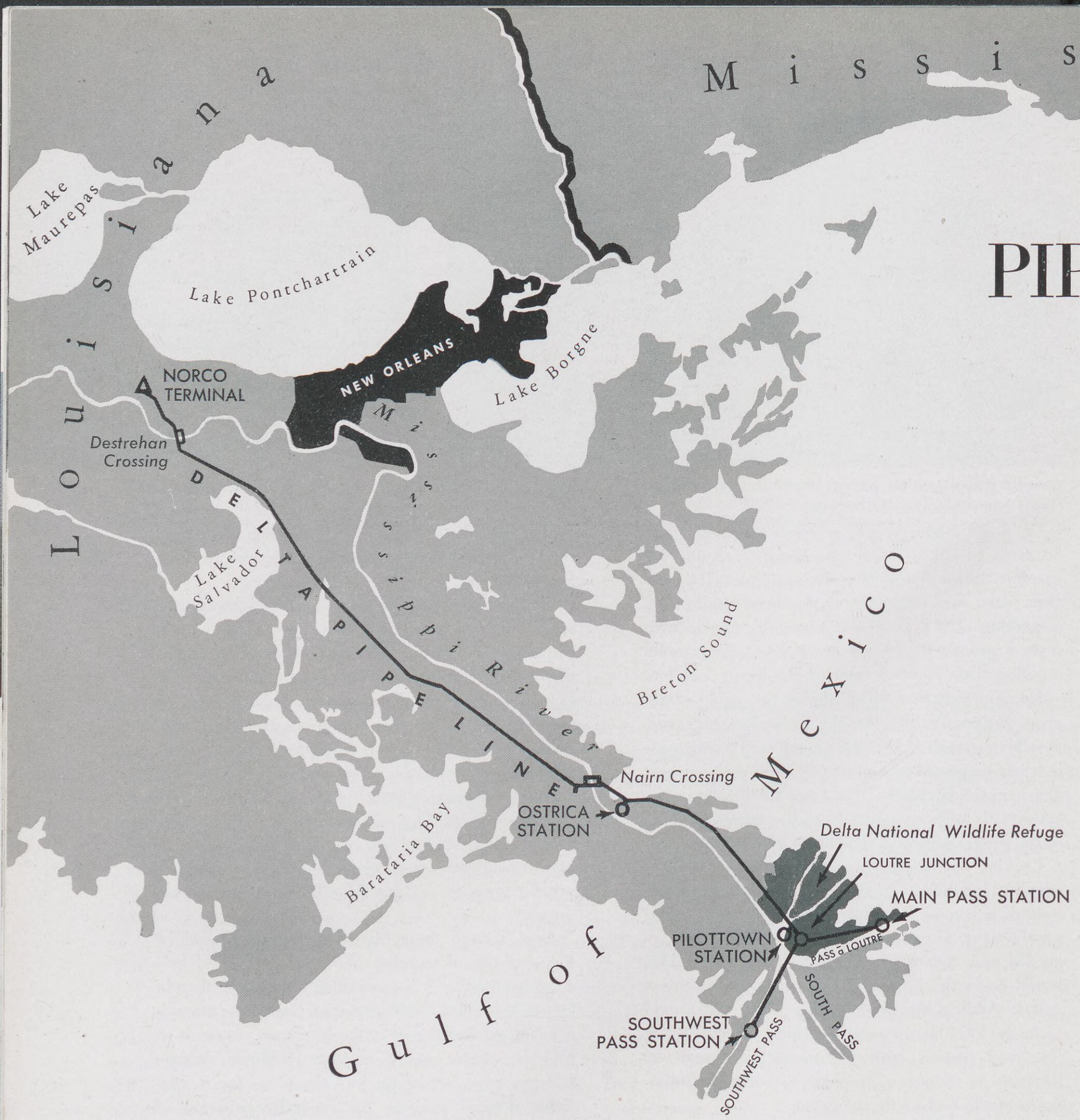
The oil industry has generally gone along with the position that highway user taxes, including gasoline taxes, are a fair means of covering the expense of building and maintaining highways — provided that: 1) legal safeguards exist to prevent diversion of such taxes for other than highway purposes; and 2) the level of highway user taxation does not become so high that it will curtail the use of highways by the motoring public.

Is it possible to provide the $40 billion needed for the Interstate system within the framework of these two principles?

My answer is yes—by applying all highway user taxes now being collected from motorists to highway purposes. In the 1958 fiscal year, $3½ billion was collected through all Federal automotive excise taxes; 42 per cent of this, or $1.5 billion, was diverted to uses other than highways. Besides, a substantial percentage of state highway user taxes were similarly diverted; only about half of the states have adequate safeguards insuring the use of these taxes for highway building and maintenance. If all these special taxes collected from highway users went into highways, there would be enough money from the present taxes to pay for the national highway programs.

Even though these highway programs could be financed out of existing highway user taxes, let's consider whether it is possible to reduce this already excessive burden on the motorist. One of the reasons why the estimated cost of the Interstate system is so high is because many expensive national defense features have been built into the plans for it. National defense projects are generally paid out of general tax revenues contributed by all taxpayers. Why shouldn't that portion of the cost of the highway program attributable to national defense features be paid out of general tax revenues rather than being loaded entirely on motorists in the form of special highway user taxes?

If these suggestions were followed, we could finance the highway program, possibly reduce rather than increase highway user taxes, and also encourage maximum use of the highway systems ●



The route of Shell Pipe Line's new Delta Pipe Line across Louisiana's delta country is shown on the map above. The line crosses the Mississippi River twice — at Nairn, and Destrehan, the latter near the line's Norco Terminal.

Checking surveying progress on the new line are Senior Inspector P. J. Huddleston, left, and Construction Superintendent C. L. Jarrett. In the background are Accounting Supervisor W. A. Haley, left, and Robert Bostick, seaplane owner.

s s i p p i | A l a b a m a

IPE LINE ON THE DELTA

Shell Pipe Line Builds New Line To Carry Offshore Crude To Shell Oil's Norco Refinery

THE liquid land of the Mississippi delta is not easy to cross—especially with a pipe line. But Shell Pipe Line Corporation has done it, with the help of seaplanes, helicopters, marsh buggies, boats and barges.

The Delta Pipe Line, being built under supervision of Shell Pipe Line, is scheduled for completion this month. It will transport crude oil from offshore oil fields in the Gulf of Mexico and will terminate at Shell Oil Company's Norco Refinery. The new line, a common carrier, owned and operated by Shell Pipe Line, will be 120 miles long, including about 20 miles of feeder lines.

Problems unique in Shell Pipe Line's 40-year history have been encountered during construction of the line. Referring to the problems, Construction Superintendent C. L. Jarrett said, "This is the biggest little line I've ever worked on."

Ross V. Lahr, Field Manager of construction, pointed out that about 95 per cent of the Delta's right-of-way is through marsh, which is half land and half water. "We have access by road to less than 10 per cent of the right-of-way," he said. "To reach the rest we have to use either boats, marsh buggies, airplanes or helicopters."

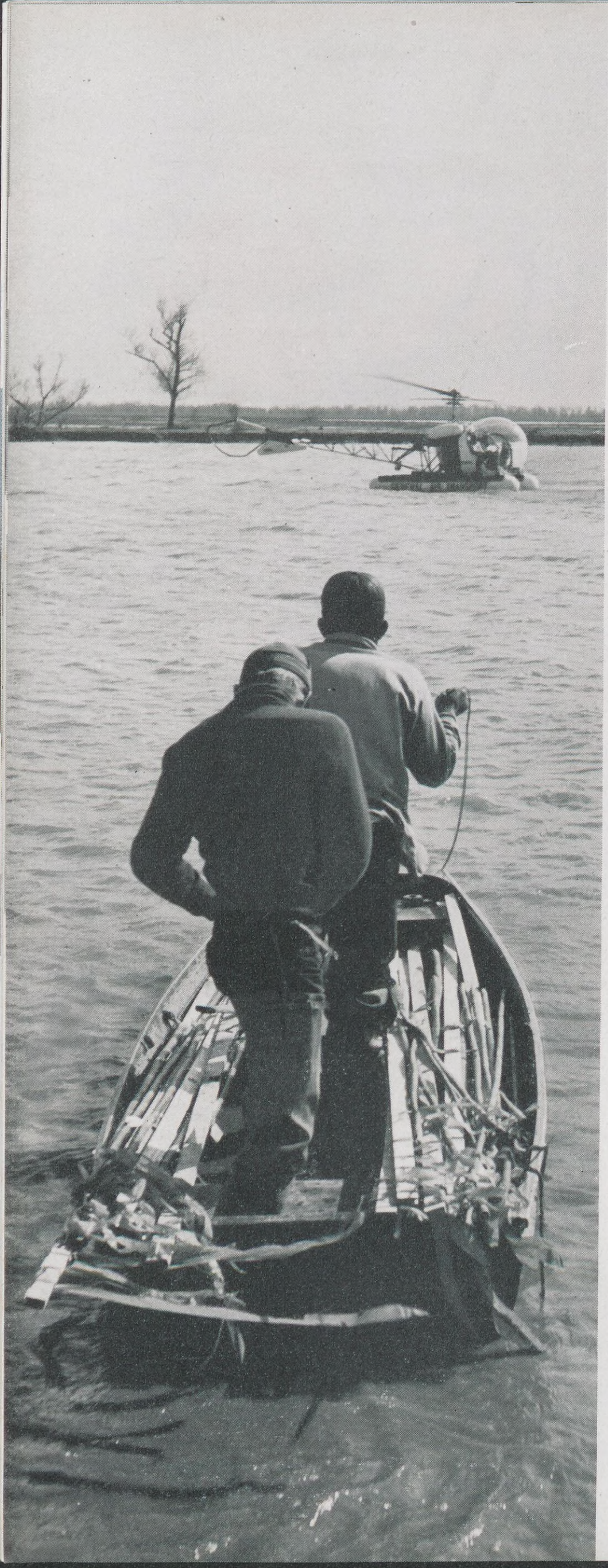
Louisiana's unusual system of describing land, inherited from the French, complicated obtaining right-of-way for the new line. For example, a typical land deed in certain parts of Louisiana might refer to "a certain tract of land in the Parish of Plaquemines, about 42 miles below the City of Orleans measuring two-and one-fourth arpents (11.5 rods) front on said river: by a depth of 80 arpents more or less. . . ."

To survey the line through the delta was another problem. The two contract survey parties relied mostly on the amphibious marsh buggies. Several crew members were carried in a buggy, while others were towed by the buggy in a small skiff at the end of a long chain. As the buggy reached a survey station, the head chainman would mark the spot by placing a survey stake on the marsh. When the skiff was towed to that point, the transitman and rear chainman would get out and stand on the firmest ground available to align the poles. On some sections, the survey crews averaged less than one mile a day through the marsh.

The right-of-way for the Delta line crosses a section of the Delta National Wildlife Refuge. While surveying here last spring, a helicopter was used to pull the skiff through the marsh because it was feared that the marsh buggies might disturb nesting birds.

Another problem in preparing the right-of-way for the new line was the oyster-breeding and muskrat-trapping industries on the delta. Where possible, the right-of-way

The 16-inch pipe for the line was stored in a yard on the Intracoastal Waterway. Watching the pipe being unloaded from barges are Material Expediter F. H. Cummins, left foreground, and Project Materialman H. E. Thomas.



was routed to avoid oyster leases and muskrat dwellings. In places where it was impossible to avoid them, Shell Pipe Line worked out arrangements with the owners to compensate for any damage.

Construction of the Delta line started last August. The first section was built in the Delta National Wildlife Refuge in compliance with a request by Federal conservation officials that all pipe-laying work in the sanctuary be completed by October 15, when ducks and geese start arriving for their annual winter visit.

A construction method ordinarily employed only on river crossings was used to build most of the 120-mile line because the marsh could not support the heavy equipment usually used to lay pipe. The method gets the job done, but is time-consuming and costly. It is called the "push-pull" technique of laying pipe. First, ditches are dredged where necessary through the marsh by a dragline mounted on marsh buggies. Then a "lay barge" is moved as close as possible to one end of the ditch. The joints of pipe are welded, X-rayed and coated on the lay barge and then pushed into the ditch. The forward end of the pipe is connected by cable to a marsh buggy, which guides the pipe into the ditch as it is pushed from the barge.

The initial design capacity of the Delta line will be 90,000 barrels a day, although the throughput in the beginning will be about 70,000 barrels daily. Among the fields that will keep the line supplied with crude oil is South Pass Block 24, which has proved reserves estimated at nearly 300 million barrels. It is Louisiana's largest field, discovered by Shell in 1950.

The Delta line has two major advantages over the present system of transporting offshore crude by barge up the Mississippi River to the Norco Refinery: 1) Considerable savings will be made in transportation costs and 2) The line will assure the delivery of crude under all weather conditions.

"Greater efficiency will be possible," said R. W. Faulk, Norco Refinery Manager, "because we will be able to make long-range planning on a more positive basis."

The first step in transporting offshore crude oil to Norco will remain the same. The oil moves from the offshore wells either through an elaborate system of underwater pipe lines or in barges to Shell's Southwest Pass and Main Pass facilities, operated by the New Orleans

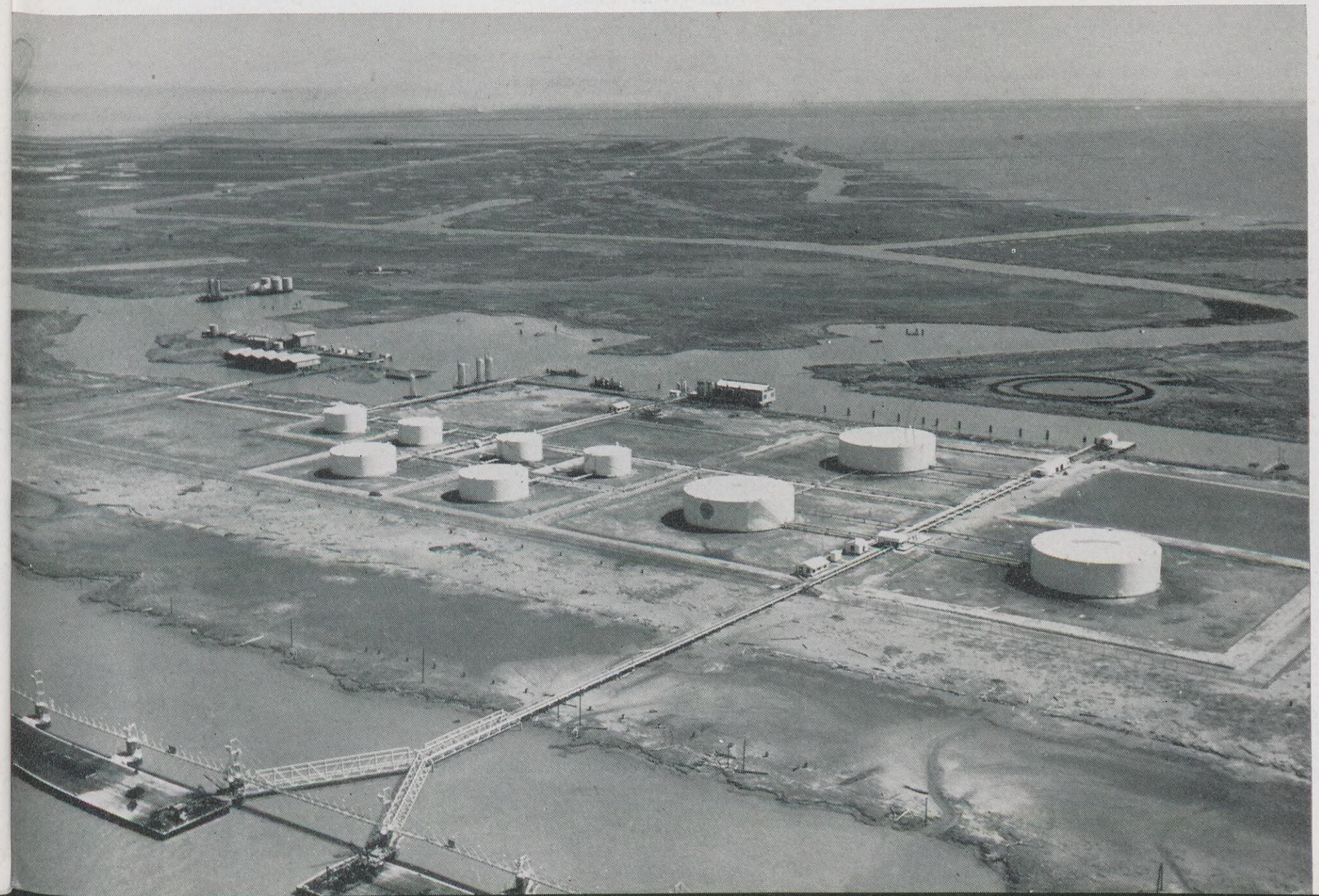
Surveyors used a helicopter to pull their boat while surveying across the Delta National Wildlife Refuge. The helicopter was used instead of a marsh buggy because conservation authorities thought it would be less disturbing to the Refuge's nesting birds.

Exploration and Production Area. Here the oil is run through heater-treaters to remove water and then it is sent to storage tanks. At this point the transportation system will change with completion of the Delta line.

From the storage tanks, crude will be moved through feeder lines by pump stations under construction at both Southwest Pass and Main Pass. The feeder lines will join near Pass à Loutre at the mouth of the Mississippi, where the trunk line starts up the delta. (Connecting facilities have been constructed to link the line with Gulf Oil Corporation's Ostrica storage terminal and Texas Company's Pilottown storage terminal, both located between Pass a Loutre and Nairn.) The first 35 miles of the trunk line will be 16 inches in diameter and the remainder will be 20 inches in diameter.

Today, the Delta Pipe Line is nearing completion and most of the problems have been solved. Shell Pipe Line people previously have crossed mountains, rivers and deserts with their pipe lines; now to them, Louisiana's marsh country is simply another stretch of terrain that had to be spanned ●

After welding and coating joints (under canopies at left) on a lay barge anchored near the mouth of a ditch, the pipe is pushed from the barge into the water-filled ditch as a marsh buggy (located beyond the horizon in the photo) pulls the pipe from the other end.



This aerial view shows Shell's Southwest Pass facilities, where offshore crude oil is run through heater-treaters to remove water and then stored. A feeder line will connect the storage tanks here with the trunk line of the Delta Pipe Line.

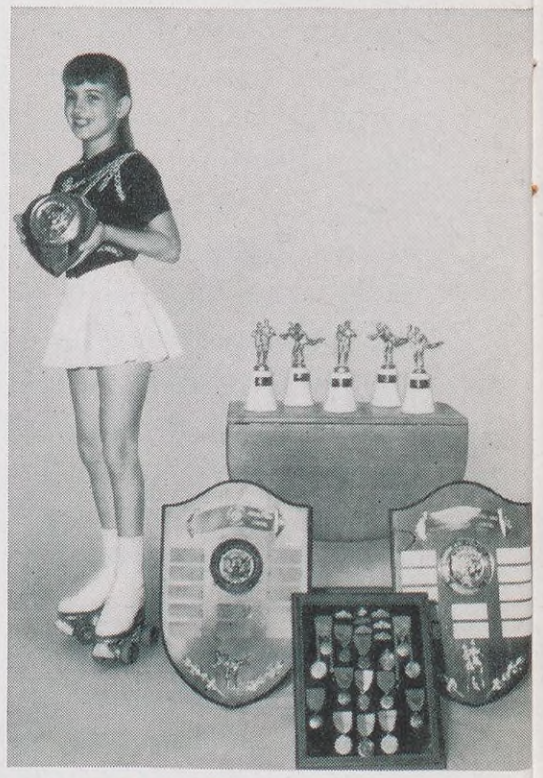
SHELL Coast to Coast

TV CHEERS

Betty Upchurch, Shell Pipe Line Corp. Receptionist at Houston, graced local TV screens this fall as a cheerleader on a weekly football show, "The Coaches' Conference." She has won many beauty and scholastic honors.

SHERMAN OF SHERWOOD FOREST

V. L. Sherman, Surveyor-Permitman in the Denver E&P Area, goes hunting the hard way—with a 48-pound bow and home-made arrows. Before shooting a deer in Wyoming last year, he had confined his archery to small game. In New Mexico this year, he shot a 400-pound-plus buck elk, shown above, from 44 yards.



GREAT SKATE

Rene'a Bates, shown with her many prizes, recently won a second place in the National Roller Skating Contest. Her father is F. P. Bates, Zone Supervisor in the Houston Chemical Plant Eng. Dept.

RUSSIAN SPOKEN HERE

Several employees from Shell installations around San Francisco attend two evening adult courses in scientific Russian, held by the Berkeley, Calif., school system, and taught by Senior Laboratory Assistant J. P. Mailkoff of Emeryville Research Center. Shown reading with Mailkoff in class are Chemist H. E. Lunk (in white shirt, left back row), Chemical Abstractor Pat Olson (at Lunk's right), and Chemist Cyril Barter (at far end, left front row) of Emeryville; and Laboratory Assistant A. Klinger (behind Mailkoff, right) of Martinez Chemical Plant.

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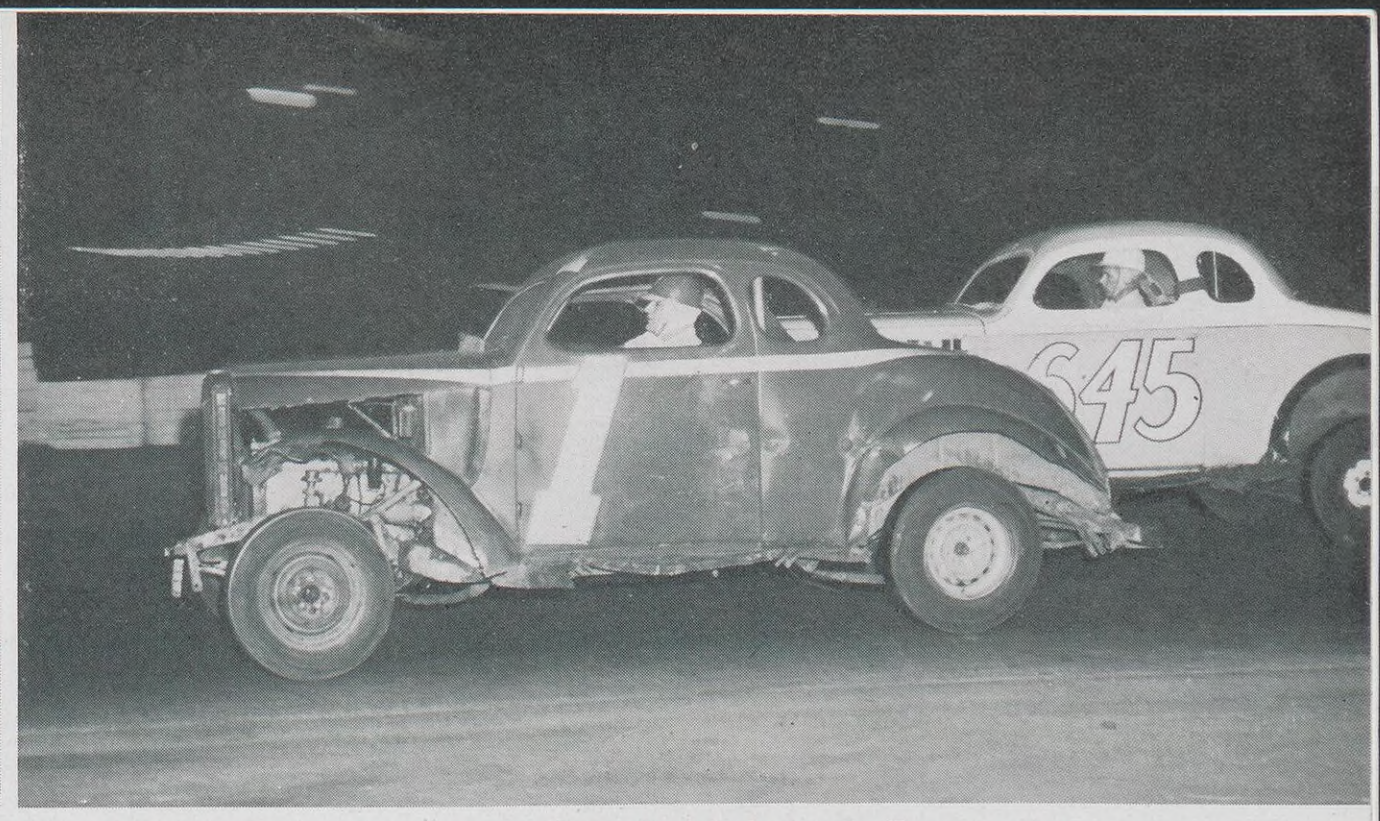
pervisor in the
ant Eng. Dept.



Racers Domanick, left, and Brunnhoelzl. Domanick, in car No. 1, edges out Brunnhoelzl during a Freeport feature race.

CHECKERED FLAG FOES

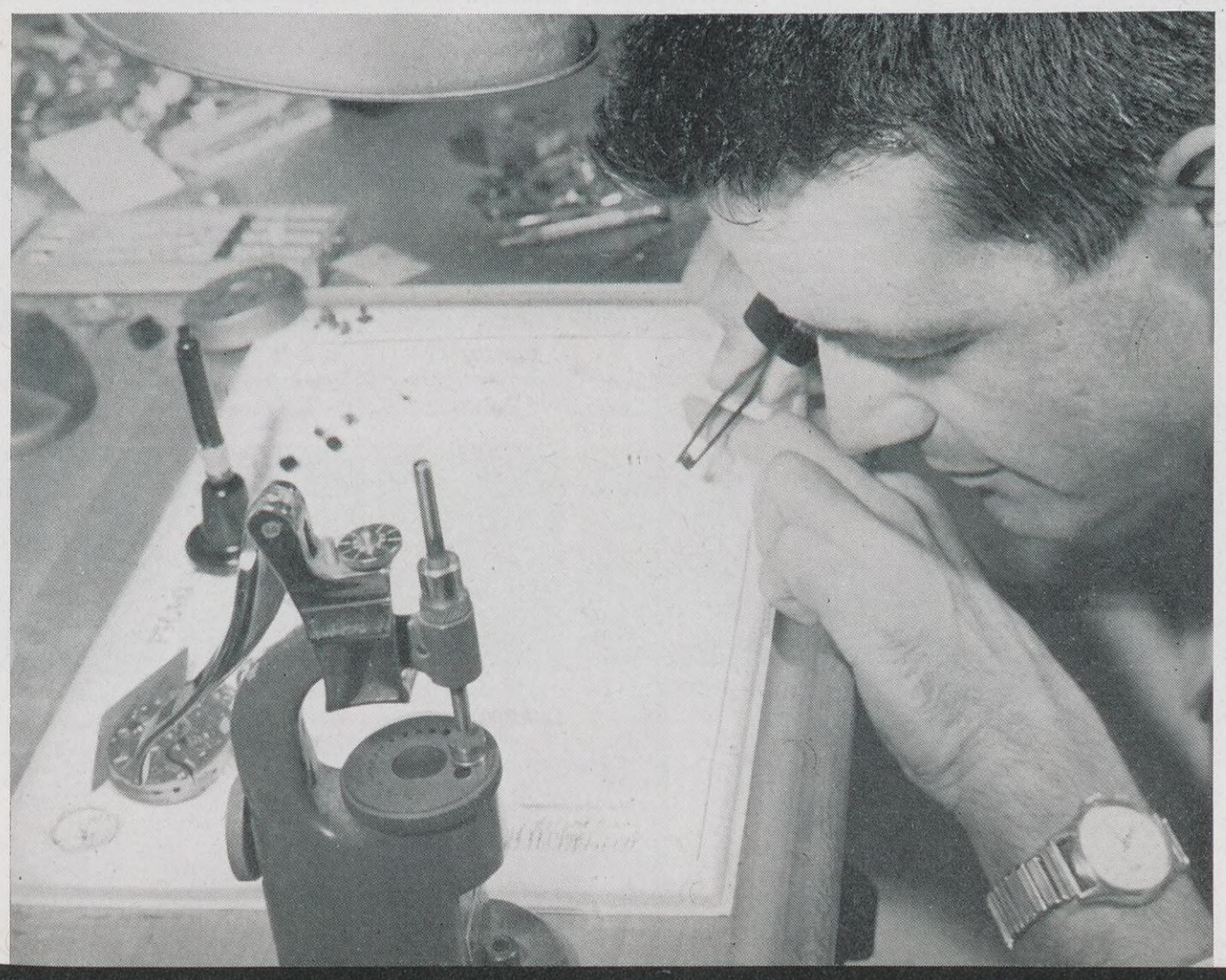
Every Saturday night two Shell employees of the New York Marketing Division become friendly enemies. On that night, Driver-Salesman H. Domanick and Mechanic E. C. Brunnhoelzl, behind the wheels of roaring stock cars, are powerful competitors for the coveted checkered flag of victory in the weekly races at Freeport Stadium on Long Island, N. Y.

Between both men, they have won the top driver award every season in the past eight years except 1953 and 1955. Domanick, who drives under the name of "Les Ley," won the Freeport honor in 1951, 1954 and 1956. Brunnhoelzl earned the award in 1952, 1957 and 1958.

One of Domanick's proudest achievements is the winning of the 50-lap Midsummer Championship every year since 1954. Brunnhoelzl won it in 1953.

Domanick, has been driving with Shell since 1946 and Brunnhoelzl has been with the Company since 1951. Both men, who have closets full of trophies and are looking forward to more, claim that racing is a sport that gets in your blood.

"Once you get started," Brunnhoelzl said, "it's like a good book that you can't put down."



A GEM OF A HOBBY

When R. J. Clerc, Senior Research Chemist at the Houston Refinery, putters around his workshop, he's puttering with expensive diamonds and watches. Clerc, who learned gem appraising and watch repairing from his father, continued it as a hobby after joining Shell 15 years ago. Clerc uses his own rating chart — matching carats against color and flaws—when he appraises diamonds. At left, Clerc examines a stone for flaws. The instrument in front is used to put balance staffs on watches.

SHELL Coast to Coast

continued

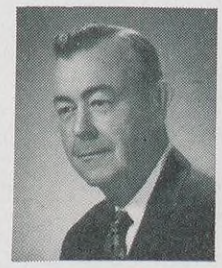
GRANDEST OPENING

This new Shell service station in Kettering, Ohio, a suburb of Dayton, now holds the title of "World's Champion Grand Opening." In four days, 65 driveway salesmen pumped 166,000 gallons of gasoline—2,000 an hour—which upset a Boston record of 74,832 gallons in three days. Standing in front of the station's gaily-decorated window on its highly-publicized opening night are (left to right) Kettering Mayor R. S. Dybvig; Vice President M. Miles of the Goodyear Tire and Rubber Company; J. H. McGrath, Dayton Marketing District Manager; E. H. Cain, Assistant to Manager, Head Office Retail Department; F. H. Staub, Sales Assistant to Vice President, Midwest Marketing Divisions; and Margaret Putnam, Miss Ohio, 1958.

Service BIRTHDAYS

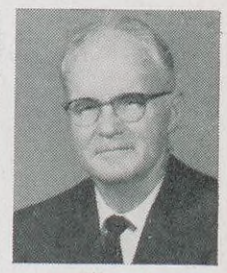
Thirty-Five Years

D. I. AYRES
Wood River Refinery
Lubricating Oils



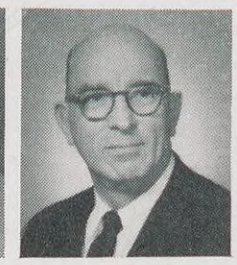
P. B. STEWART
Wood River Refinery
Thermal Cracking

C. F. STOWMAN
Pipe Line Department
Long Beach, Calif.

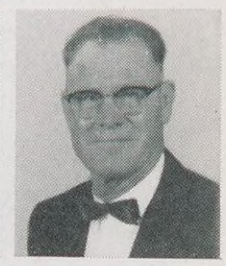


F. L. WHITTINGTON
Shell Pipe Line Corp.
Mid-Continent Division

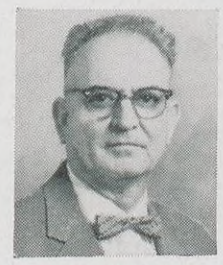
A. W. BEAN
Wood River Refinery
Distilling



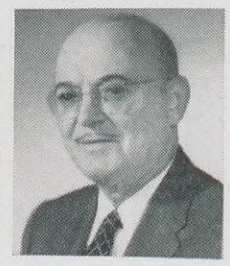
H. G. BIRCH
Shell Development Co.
Emeryville



J. C. BRUMLEY
Tulsa Area
Production

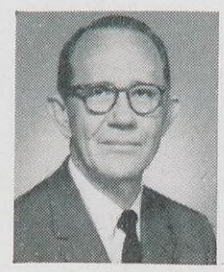


W. M. JACKSON
Wood River Refinery
Engineering



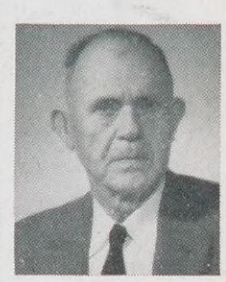
H. J. KENNEDY
Houston Refinery
Utilities

W. M. KOUNS
Shell Chemical Corp.
Head Office



C. J. OTT
Shell Development Co.
Emeryville

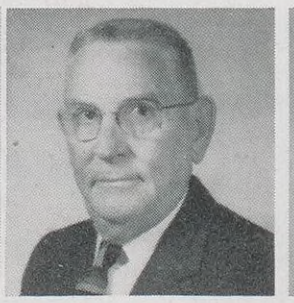
W. PETERSON
Houston Refinery
Dispatching



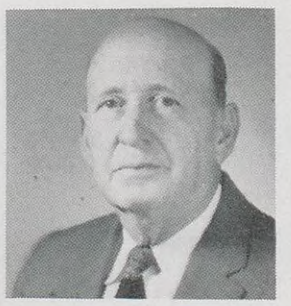
G. RAGAN
Houston Refinery
Engineering

(EDITOR'S NOTE: Beginning with this issue, Service Birthday announcements are confined to pictures of employees celebrating anniversaries of 25, 30, 35, and 40 years. Listing of service birthdays of 10, 15, and 20 years will not be continued because the number of these anniversaries has increased to where it is not practical for SHELL NEWS to continue adding pages for this feature.)

Forty Years



L. C. BECKER
New Orleans Area
Production



W. L. PARKER
Tulsa Area
Gas

D. I. AYRES
Wood River Refinery
Lubricating Oils

R. M. BARBEE
Anacortes Refinery
Zone C

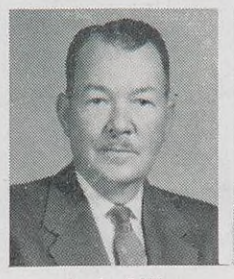
C. L. BURNETT
Shell Pipe Line Corp.
Mid-Continent Division

F. H. DOLE
San Francisco Office
Personnel

W. J. HALL
Tulsa Area
Production

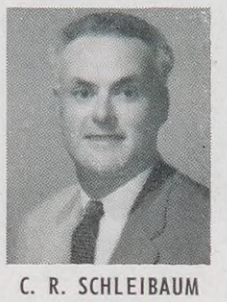
I. F. HEITMANN
San Francisco Division
Treasury

E. E. LANCASTER
Wilmington Refinery
Compounding



L. C. RAY
New Orleans Division
Sales

E. E. SAXTON
Los Angeles Division
Sales

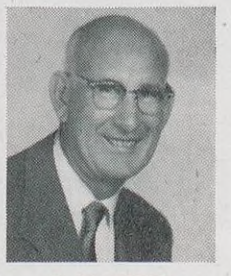


C. R. SCHLEIBAUM
Pacific Coast Area
Production

F. L. WHITTINGTON
Shell Pipe Line Corp.
Mid-Continent Division

N. M. WILSON
Tulsa Area
Production

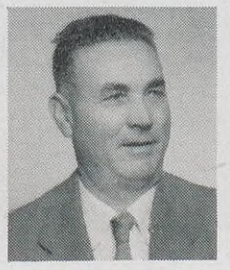
W. G. WINSTEAD
Wood River Refinery
Utilities



P. W. WOOD
Pacific Coast Area
Production

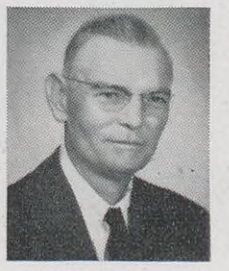
Thirty Years

R. W. ABADIE
New Orleans Division
Marketing Service



J. ANDRADE
Martinez Refinery
Engineering

E. A. AUCOIN
Norco Refinery
Engineering



G. W. BARNETT
Shell Pipe Line Corp.
Texas-Gulf Division

J. C. BRUMLEY
Tulsa Area
Production

F. C. CORNELL
Houston Refinery
Engineering

R. M. COULSON
Portland Division
Treasury

F. E. FISHER
St. Louis Division
Personnel

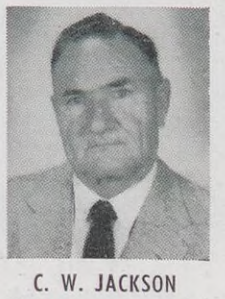
LOLA M. FUGATE
Pacific Coast Area
Legal

O. W. GAUL
Shell Pipe Line Corp.
Head Office

W. C. HARTMAN
Tulsa Area
Production

W. T. HILL
Shell Chemical Corp.
Houston Plant

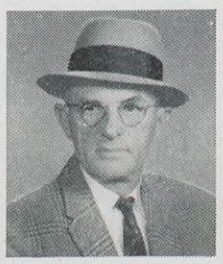
J. H. HOLMES
Pipe Line Dept.
Zionsville, Ind.



C. W. JACKSON
Shell Pipe Line Corp.
Texas-Gulf Division

W. M. KOUNS
Shell Chemical Corp.
Head Office

J. P. LUCEY
Martinez Refinery
Treasury



P. W. LYTTLE
Pacific Coast Area
Production

J. R. MAC LEAN
San Francisco Office
Transp. & Supp.

K. L. McBRIDE
Pipe Line Dept.
Crows Landing, Calif.

J. S. McGLASSON
Shell Pipe Line Corp.
Four Corners Division

D. W. McLEAN
Wood River Refinery
Pers. & Ind. Rel.

H. H. McOMBER
Pacific Coast Area
Production

C. M. MERRILL
Shell Pipe Line Corp.
Four Corners Division

J. C. NOWELL, JR.
San Francisco Office
Transp. & Supp.

G. RAGAN
Houston Refinery
Engineering

G. B. RICHARDS
Wood River Refinery
Engineering

F. I. RICHARDSON
Denver Area
Administration

W. T. RIGGS
Houston Refinery
Engineering

E. B. SCHERER
Head Office
Expl. & Prod.

ARLINE M. SCHLEUTER
St. Louis Division
Treasury

R. J. SEARLES
Shell Chemical Corp.
Dominguez Plant

F. T. SUZUKI
Honolulu Division
Sales

R. E. L. TAYLOR
Midland Area
Exploration

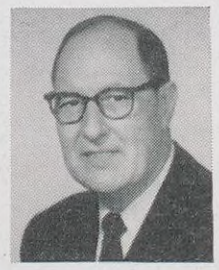
R. L. THORNTON
Shell Chemical Corp.
Houston Plant

Thirty Years continued

F. G. TILTON
Houston Refinery
Distilling

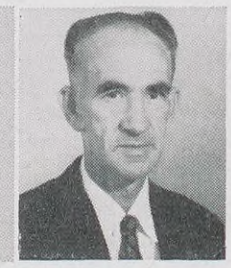
B. F. WAGUESPACK
Norco Refinery
Dispatching

J. C. YATER
Wood River Refinery
Thermal Cracking



D. R. ZINSER
Shell Chemical Corp.
San Francisco

Twenty-Five Years

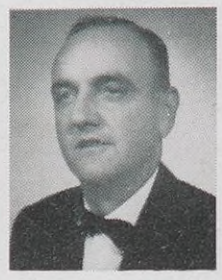


J. J. ALLEN
Wilmington Refinery
Thermal Cracking

E. M. BARTLEY
New Orleans Area
Production

W. F. BATES
Pacific Coast Area
Production

M. E. BEATTY
Detroit Division
Sales

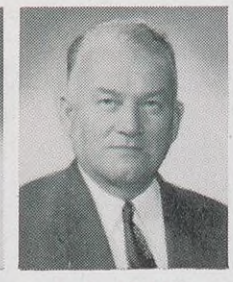


R. E. BISHOP
Houston Refinery
Dispatching

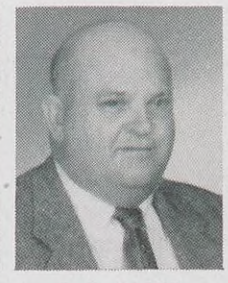
E. L. BLINN
Head Office
Transp. & Supp.

H. B. BUSH
San Francisco Division
Sales

E. C. CARROLL
Pacific Coast Area
Production



H. S. CORLISS
Boston Division
Operations



C. E. DRAKE
Shell Chemical Corp.
Dominguez Plant

H. C. FINDLAY
Shell Chemical Corp.
Syn. Rubber Sales Div.

H. K. GRAHAM
Honolulu Division
Operations

T. L. GRAHAM
Los Angeles Division
Sales

R. L. GRAY
Wood River Refinery
Lubricating Oils

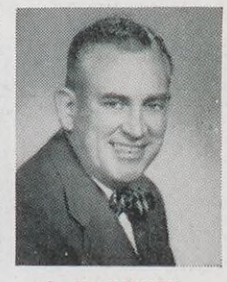
E. A. HACK
Head Office
Financial

W. I. HOEFER
Tulsa Area
Production

D. HOLCOMB
Shell Pipe Line Corp.
Texas-Gulf Division

C. W. HOLLIMAN
Shell Chemical Corp.
Houston Plant

C. A. KIBLER
Wood River Refinery
Compounding



G. M. KINNEY
San Francisco Division
Sales

C. A. LA JOIE
Seattle Division
Sales

R. F. LEA
Wilmington Refinery
Thermal Cracking

L. L. LEONHARDT
Denver Area
Transport

A. J. LYONS
St. Louis Division
Treasury

E. T. MADOSH
Wood River Refinery
Lubricating Oils

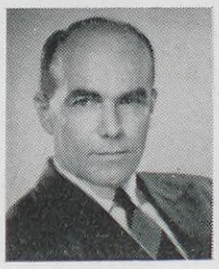
H. F. McFALL
Houston Refinery
Catalytic Cracking

P. J. MERKUS
Wood River Refinery
Manager

R. H. MILLER
Midland Area
Exploration

T. S. MITCHEL
Head Office
Expl. & Prod.

L. G. NAGLE
St. Louis Division
Operations



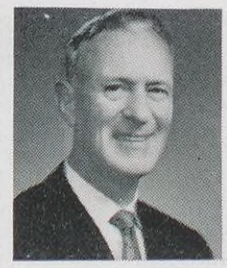
C. M. D. PETERS
Head Office
Transp. & Supp.

W. G. RAYHAWK
Wilmington Refinery
Stores

L. W. RICHARDSON
Los Angeles Division
Operations

H. F. RICHTER
Atlanta Division
Marketing Service

V. ROLAND
Sacramento Division
Sales



E. W. RONEY
New Orleans Division
Sales

A. J. ROUSSEL
Norco Refinery
Engineering

C. V. SCHER
Boston Division
Sales

E. B. SELLERS
New Orleans Division
Operations

P. W. SMART
Boston Division
Operations

I. W. SMITH
Wood River Refinery
Compounding

W. E. SPEAR
Denver Area
Production

J. R. VAWTER
Houston Refinery
Gas

F. W. VEDEN
Los Angeles Division
Sales

W. G. WALSH
St. Louis Division
Administration

LEONE E. ZANDER
Shell Chemical Corp.
San Francisco

E. M. BARTLEY
New Orleans Area
Production

H. C. FINDLAY
ell Chemical Corp.
. Rubber Sales Div.

G. M. KINNEY
Francisco Division
Sales

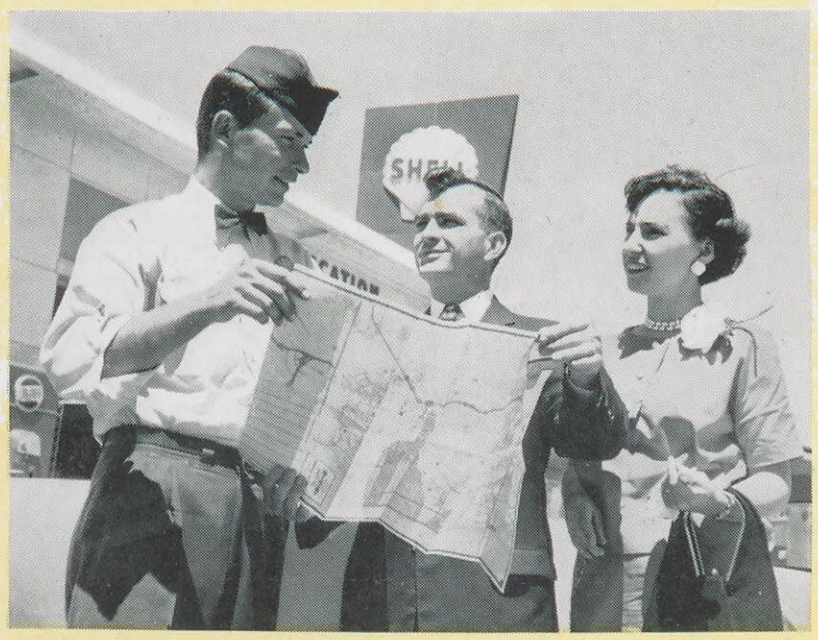
T. S. MITCHEL
Head Office
Expl. & Prod.

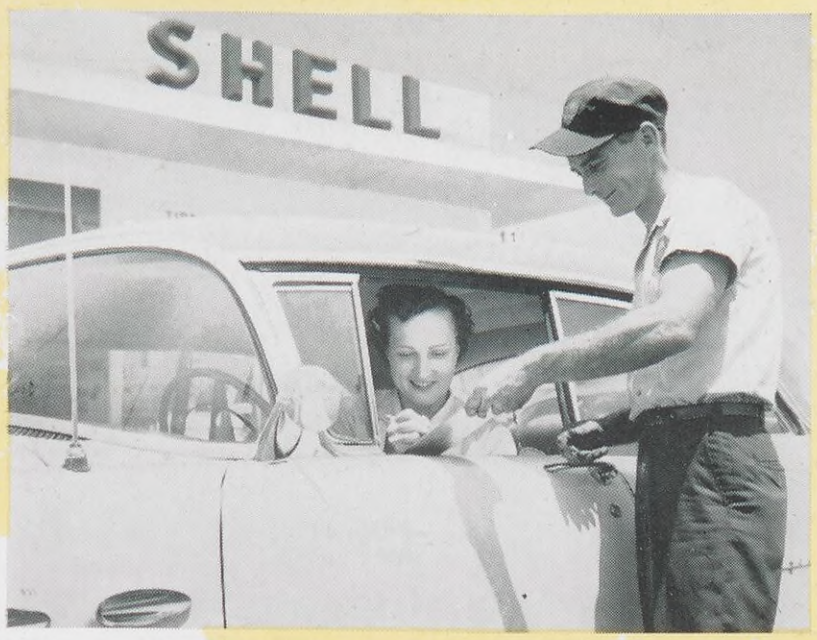
C. V. SCHER
Boston Division
Sales

matters of fact

MAKING FRIENDS FOR SHELL

Norman Rockwell





Most people get acquainted with Shell at the more than 23,000 Shell service stations around the country. That's where the public meets the men who make friends for Shell. As independent businessmen, Shell dealers are striving to boost sales by offering fast, efficient and friendly service.

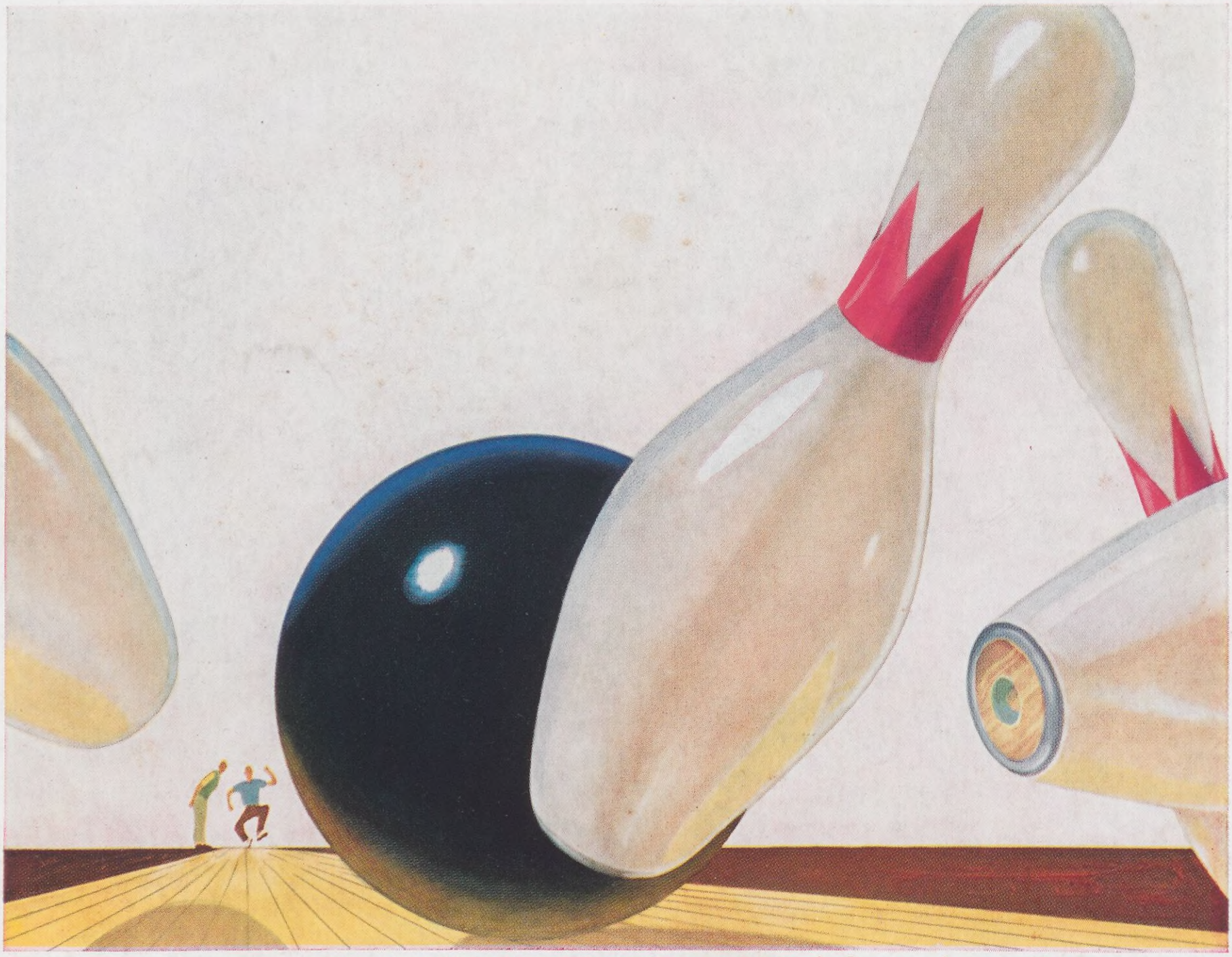
Their efforts are beneficial not only to themselves and to Shell, but also to every Shell employee.

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

(This will appear as an advertisement this month in national magazines.)



THE BRUNSWICK-BALKE-COLLENDER COMPANY, leading manufacturer of bowling equipment, doubles the life of its Red Crown Dura-King Pins with the help of a product of Shell Research.

No chips off this old block

FACING UP to 20 million bowlers is no cinch for the poor pins. Battered and bounced by the balls, handled and rehandled by automatic pinsetters, few bowling pins could survive the 1000-game mark, until a new type of resin coating got into action.

To apply this new coating efficiently, Brunswick needed an exceptionally powerful solvent. They found it in a special Shell product, which has great solvency for resin solids.

As a result, Brunswick-Balke-Collender's Dura-King bowling pins now last for *2000 games or more*. They do not chip or scratch easily. They stay clean and bright longer—offer bowlers a better target.

' ' '

Developing high-purity solvents for better finishes is just one example of Shell Research. You benefit by this research whenever you say "Fill 'er up" at your neighborhood Shell Station.