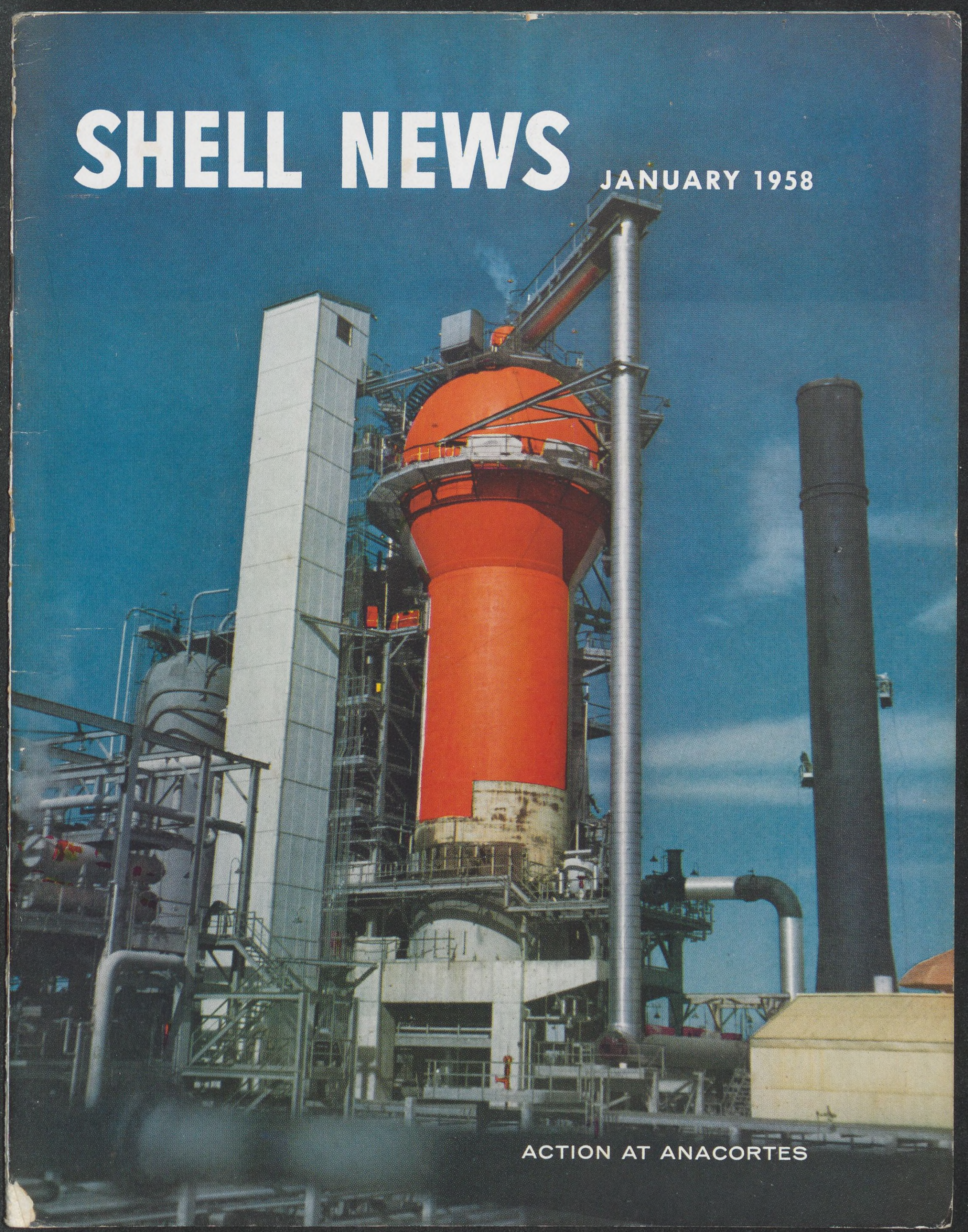
SHELL NEWS

JANUARY 1958



ACTION AT ANACORTES

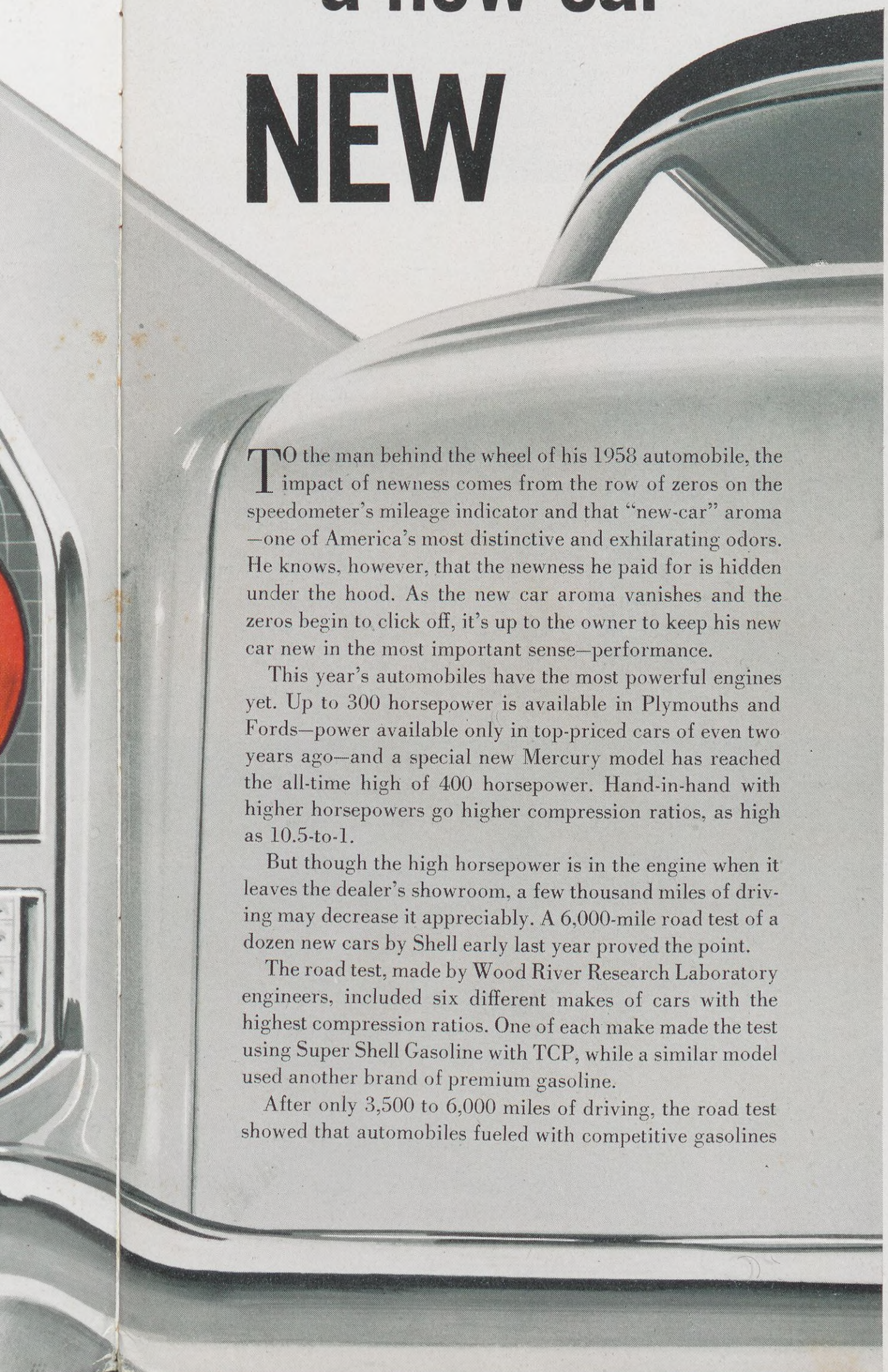
*Shell gasolines with TCP**

maintain the higher horsepower

built into 1958 model auto engines

*TRADEMARK SHELL OIL COMPANY

How to keep a new car NEW



TO the man behind the wheel of his 1958 automobile, the impact of newness comes from the row of zeros on the speedometer's mileage indicator and that "new-car" aroma —one of America's most distinctive and exhilarating odors. He knows, however, that the newness he paid for is hidden under the hood. As the new car aroma vanishes and the zeros begin to click off, it's up to the owner to keep his new car new in the most important sense—performance.

This year's automobiles have the most powerful engines yet. Up to 300 horsepower is available in Plymouths and Fords—power available only in top-priced cars of even two years ago—and a special new Mercury model has reached the all-time high of 400 horsepower. Hand-in-hand with higher horsepowers go higher compression ratios, as high as 10.5-to-1.

But though the high horsepower is in the engine when it leaves the dealer's showroom, a few thousand miles of driving may decrease it appreciably. A 6,000-mile road test of a dozen new cars by Shell early last year proved the point.

The road test, made by Wood River Research Laboratory engineers, included six different makes of cars with the highest compression ratios. One of each make made the test using Super Shell Gasoline with TCP, while a similar model used another brand of premium gasoline.

After only 3,500 to 6,000 miles of driving, the road test showed that automobiles fueled with competitive gasolines

SHELL NEWS

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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.

ABOUT THE COVER

Painting is one of the myriad jobs involved in a "catcracker turnaround," the oil industry's term for a major overhaul of a catalytic cracking unit. The 14-story catcracker on the cover — the heart of Shell's Anacortes Refinery—recently went through a 30-day turnaround. The brilliant orange color of the catcracker is the primer coat of paint; later a coat of grey was applied. An article about the turnaround starts on page 4.

New Ford models include the Fairlane Town Victoria, left, and Club Victoria. Each has an optional 300-horsepower engine with a 10.2-to-1 compression ratio.

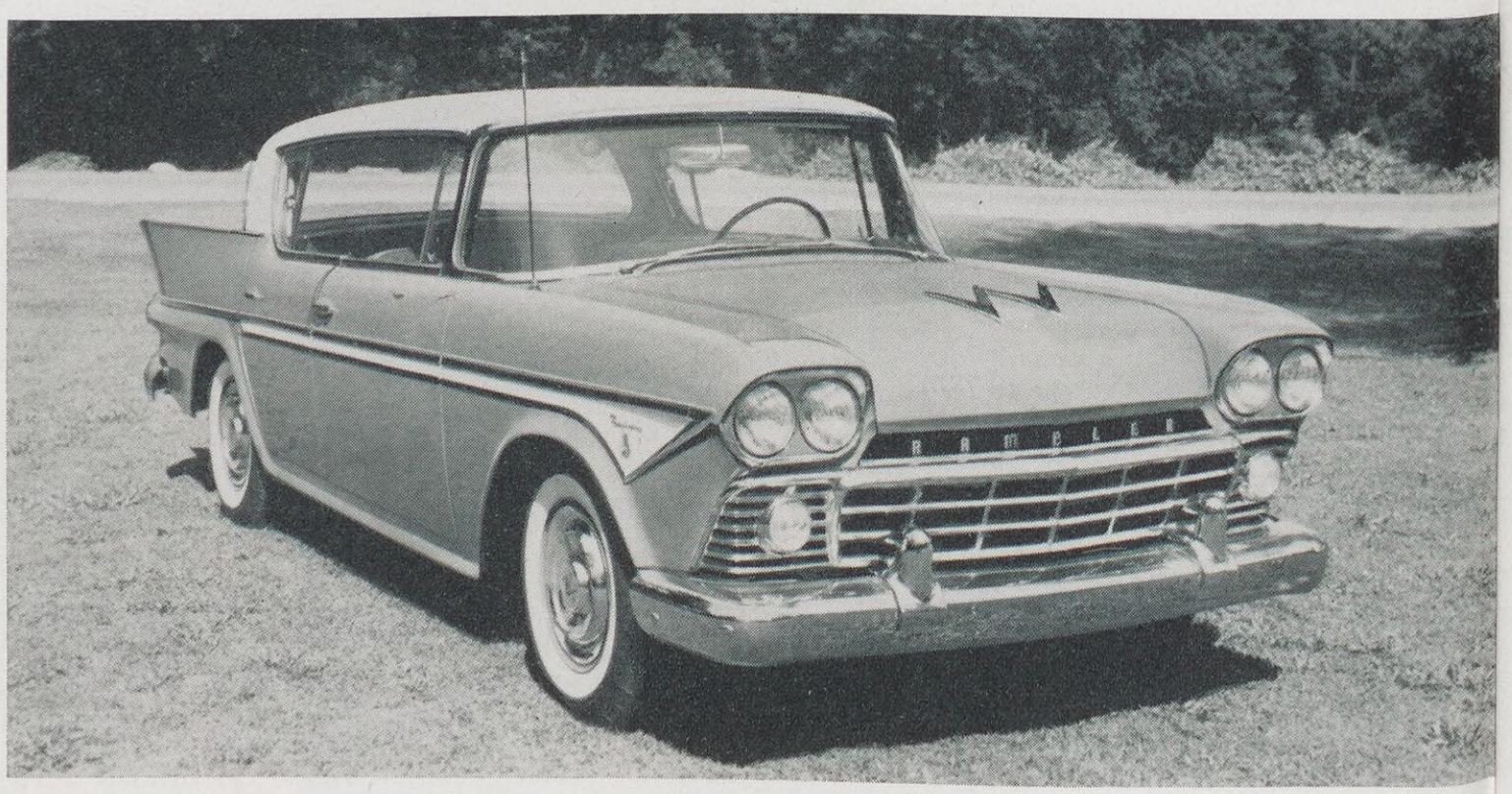
lost up to 60 per cent of their acceleration performance. Cars filled up with Super Shell with TCP lost five per cent.

The reasons for that difference in performance were not hard to find.

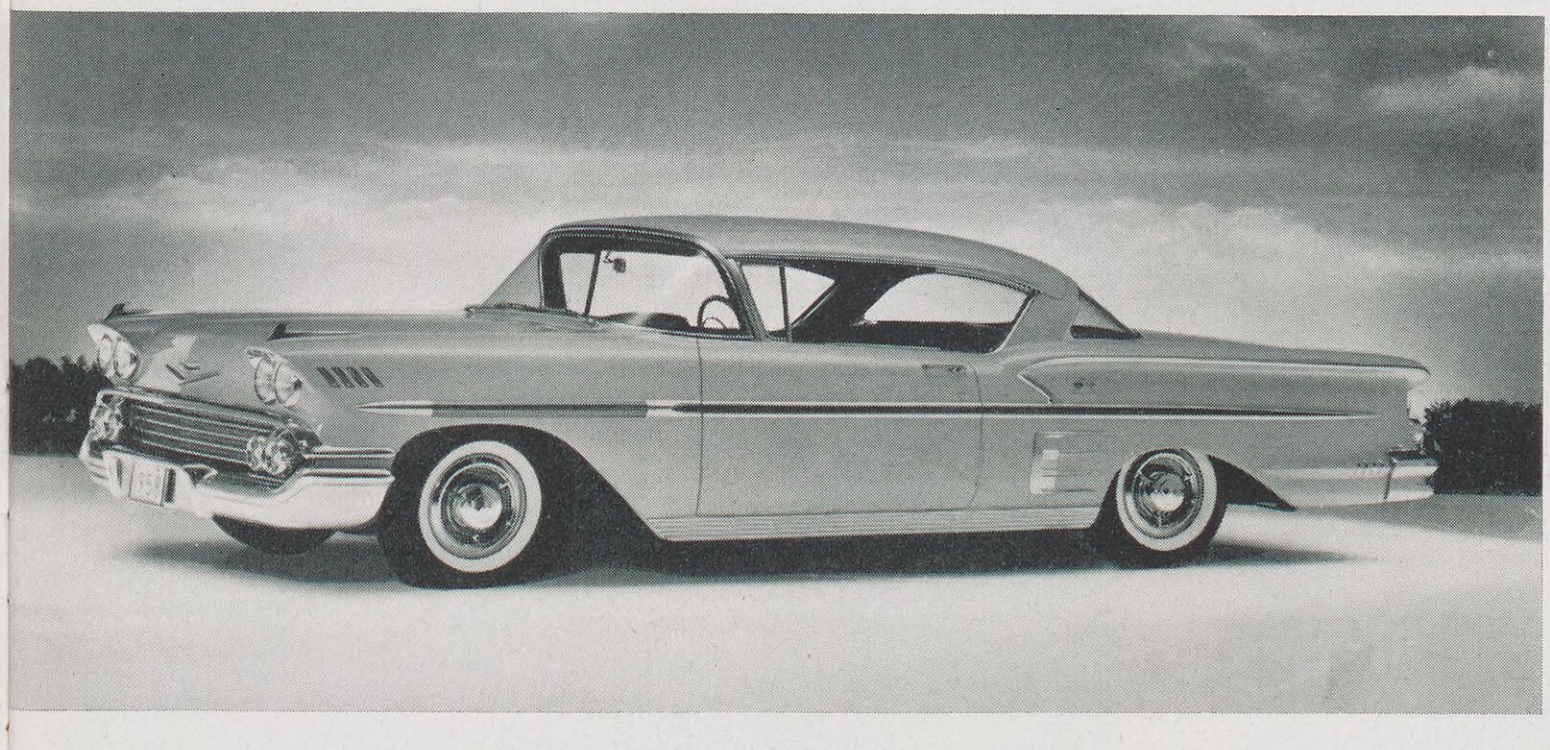
Modern engines are bigger, and the bigger the engine the cooler the combustion chamber remains during ordinary city driving, when full engine power is not needed. Deposits build up quickly within the chamber when its temperature is low. Later, when the driving pace increases, the combustion chamber temperature goes up. The deposits begin to glow, and ignite the fuel mixture prematurely, robbing the engine of power, wasting gasoline and causing engine ping.

TCP, an additive developed by Shell research and available in all Shell automotive gasolines, prevents pre-ignition by combining chemically with the engine deposits to lower their glow temperatures. When the deposits cannot glow, they cannot give off heat to ignite the fuel mixture. This means pre-ignition is no longer a problem.

Some of the engine deposits come from tetraethyl lead used in Shell and most other gasolines to give anti-



The Rambler has a V-8 engine with up to 215 horsepower and a compression ratio of 9.7-to-1. It is smaller than most new automobiles, but holds its own in power.



Chevrolet's new Impala model Sports Coupe incorporates a new 250-horsepower V-8 engine with a compression ratio of 9.5-to-1. The car gets its name from a General Motors "dream" car recently put on exhibition.

knock protection. Knock occurs when the fuel mixture does not burn smoothly after normal ignition. Tetraethyl lead prevents engine knock, but it is responsible for lead deposits inside the cylinder and on spark plugs.

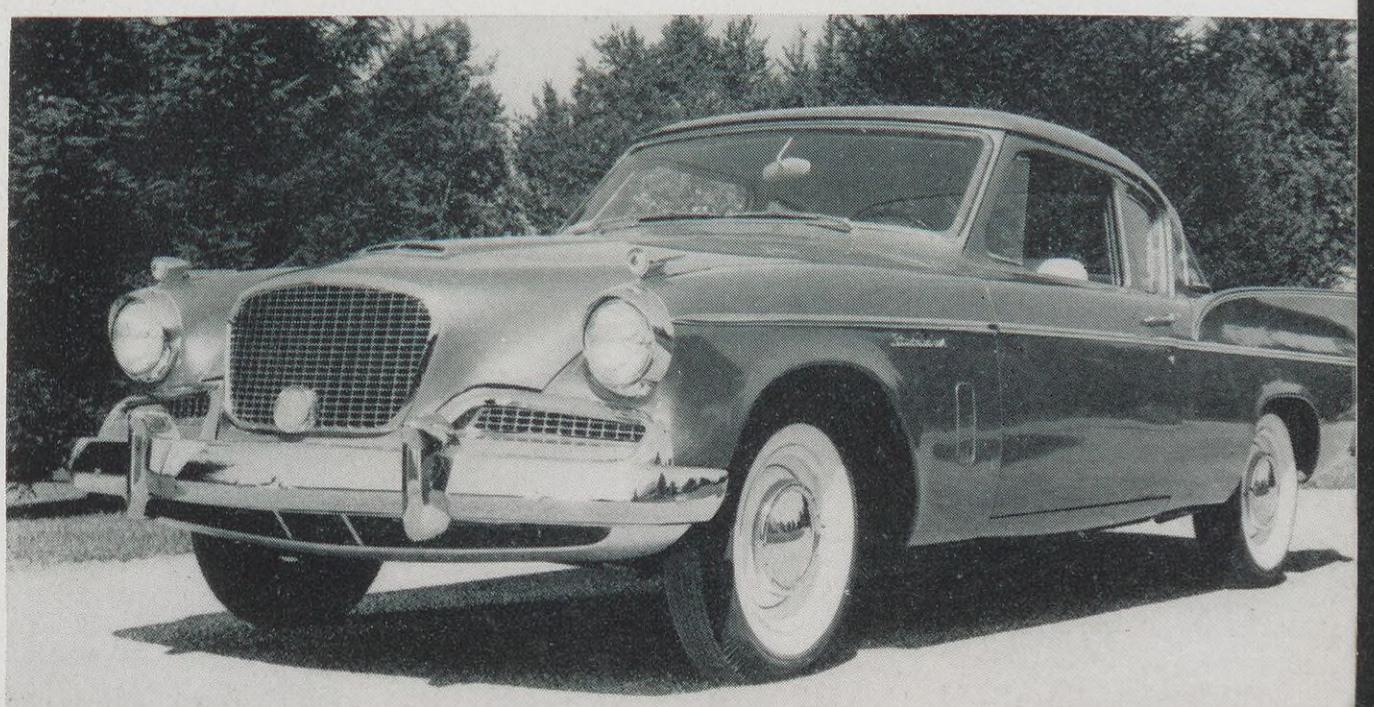
A combination of lead deposits on the plugs and high compression can mean fuel waste and power loss. The greater the compression, the more difficult it is for the spark to bridge the gap between electrodes. As lead deposits coat the plug, they act as an electrical conductor, block the spark's efforts to jump the gap, and eventually short out the plug.

TCP solves that problem, too. TCP does not remove the deposits, but it makes them harmless by neutralizing them. It combines with the lead deposits to change their chemical composition so they no longer conduct electricity. The deposits remain, but only as a harmless fluffy ash.

TCP is effective as cars get older, too. After the second tankful, power increases, gasoline consumption decreases, and spark plug fouling and pre-ignition are controlled. To the owner of a new car, the capital initials TCP can mean continuing power dividends from the initial capital invested in his 1958 automobile ●

The Plymouth Fury two-door hardtop model has a 305-horsepower engine under its hood. Its V-8 engine has a 10-to-1 compression ratio. The styling of the 1958 Chrysler Corporation cars retains the "swept-wing" look introduced in 1957.

The new Studebaker Hawk produced by Studebaker-Packard has the look of a sports car, though it is a family-size car. It has a 275-horsepower engine and a compression ratio of 7.8-to-1. It is one of six 1958 model Studebakers.



Action at ANACORTES

The catalytic cracking unit, heart of Shell's Anacortes Refinery, recently was given an overhaul—in oil industry parlance, a "turnaround" or "shutdown"

THE wide variety of knowledge and skills needed to service just one major unit of a refinery was brought home during a break in routine last fall at the Anacortes Refinery.

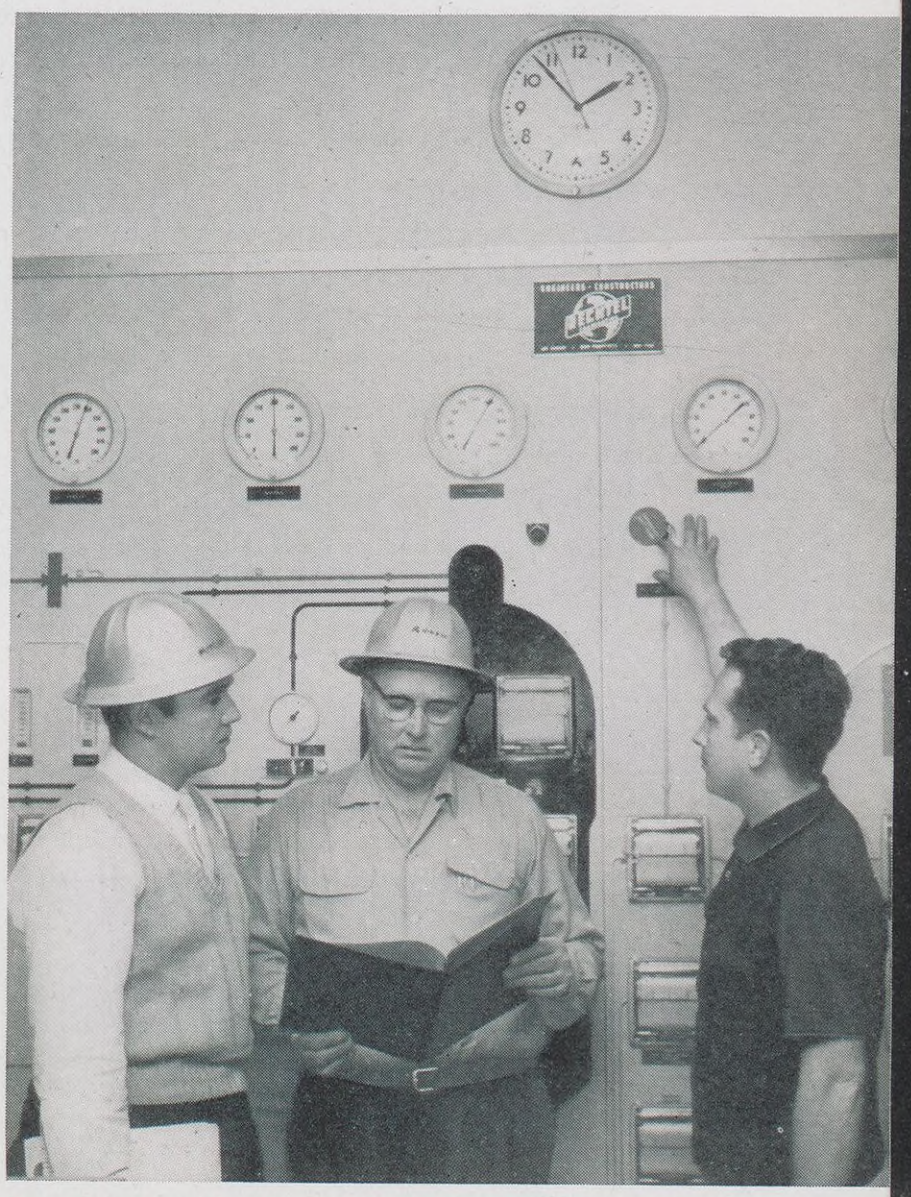
The event was the first major overhaul of the refinery's catalytic cracking unit—the cat-cracker which can process about 1,000,000 gallons of oil a day.

The overhaul, sometimes called a "turn-around" or "shutdown," took 30 days. During that time, about 500 men worked a total of 80,000 hours on the 14-story unit which is the heart of the refinery.

The roster of knowledge and skills used is long and includes: electricians and engineers, crane operators and clerks, pipefitters and

The Anacortes Refinery catcracker unit, far left, which can process about one million gallons of oil a day, was shut down for 30 days last fall for its first overhaul since it went into operation in December, 1955. A catcracker turnaround, which normally is made about every 18 months, gives the opportunity to inspect, repair and improve the unit's operation as a major part of the refinery.

Painters at work high on the boiler stack have a dramatic view of Anacortes Refinery and Puget Sound's Fidalgo Bay from their scaffolding.



Pressing the "shutdown button" which stops catalyst flow is D. W. Neutzman, Operator No. 1, Special. Department Manager W. A. Mitchell, left, and Operating Assistant J. P. Pettit, discuss plans.

Valves galore must be checked in the turnaround. P. W. Hurlocker, Mechanic No. 1-Instrument, left, fixes instrument connection and D. C. Brown, Craft Helper-Machinist, checks one of the valves.

painters, sheetmetal workers and storemen, insulators and inspectors, truck drivers and toolkeepers, also carpenters, welders, boilermakers, machinists and instrument repairmen.

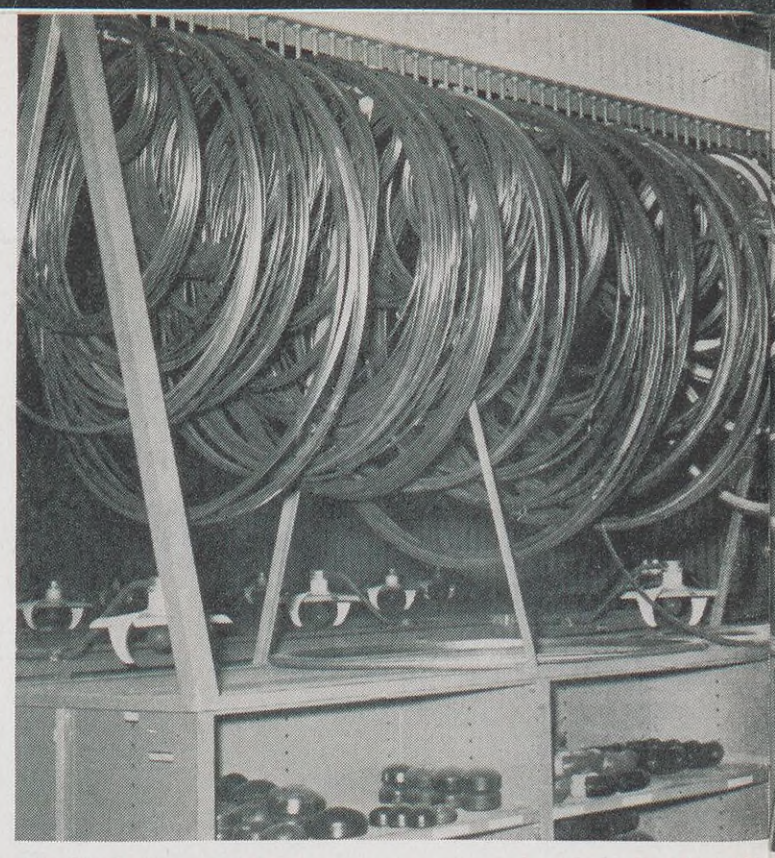
With all their coming and going around the catcracker, an outsider might have thought there was confusion. But the opposite was true: the overhaul had been planned months in advance down to the small details. The main jobs were these:

1. Go over almost every inch of the huge structure and its equipment looking for worn or defective parts and replacing or repairing them. This involved working with pipes, flanges, gaskets, bolts, motors, compressors, gauges, pumps—and scores of other parts of a catcracker.

2. Modify the unit and thus improve its efficiency on the basis of what had been learned about it since it first began operation in December, 1955.

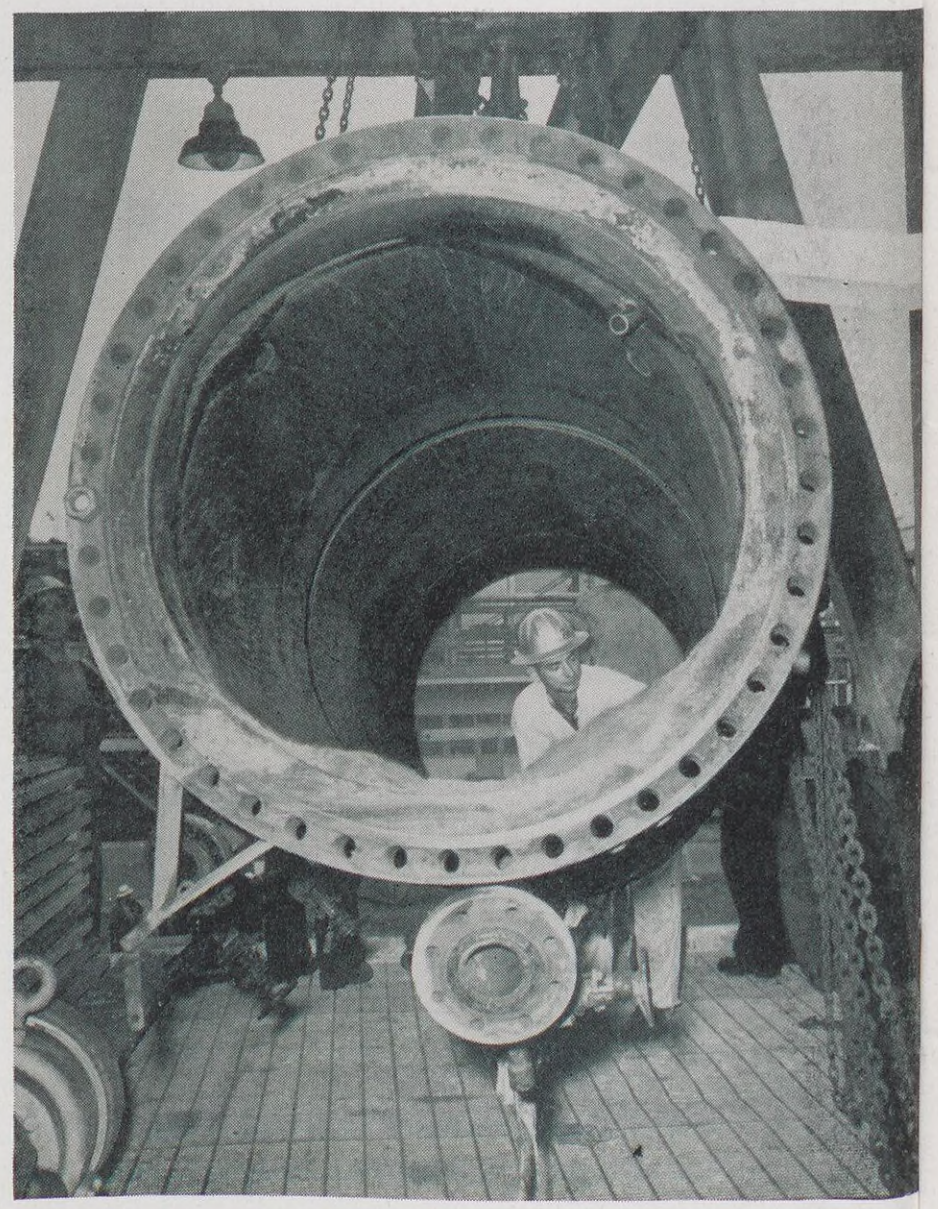
The refinery people had an interesting subject to work on—the only one of its kind in the world. The Anacortes unit is a "two-stage" catcracker; all others have one stage. This unique

(continued on page 8)



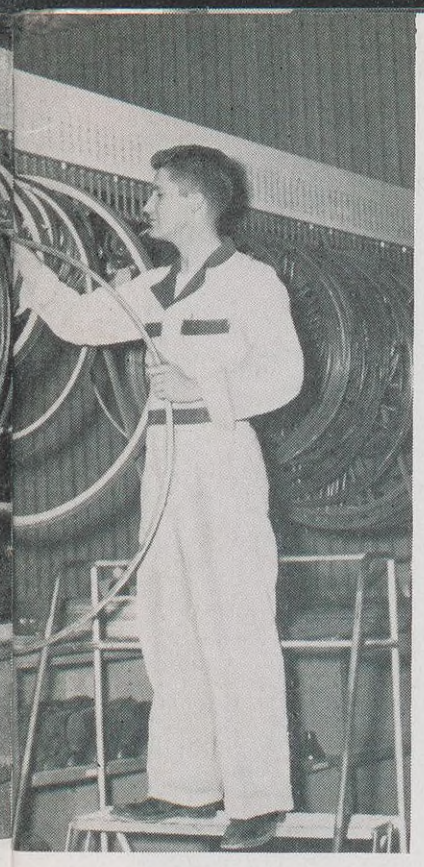
Neatly-hung gaskets are among the hundreds of items vance for the turnaround. Stockman J. D. Walker picks

Coming out of the catcracker regenerator unit is Carpenter D. W. Whittom who has laid catwalks and scaffolding inside for use by the overhaul repairmen and inspectors. Giving him a hand are W. J. Beale, Jr., Mechanic Helper-Carpenter, left, and Carpenter A. W. Mansure. The regenerator helps renew the life of the expensive catalyst.



Big pipe that carries the catalyst from the regenerator to the No. 1 reactor is taken out for repairs. Technologist D. E. Kibler examines erosion caused by the fast-flowing catalyst, composed of powdery sand-like grains of silica-alumina. About 30 tons of catalyst moves through the catalytic cracking unit every minute.

hundreds of
. D. Walker



items stockpiled in ad-
picks one from the line.

Safety goggles pushed back, F. G. Semays, Mechanic No. 1-Boilermaker, stops to inspect the chipping job he has been doing on the weld of the expansion joint in the boiler gas duct. The expansion joint, which takes up expansion and contraction from heating and cooling, was removed for repairs and rewelded in position. Semays was one of 500 men who worked 80,000 hours on the turnaround.

▲ **Corrosion** is a bugaboo of the catcracker and a big reason for a turnaround. Here, Inspector R. G. Anderson uses a pit gauge to measure the corrosion in the labyrinths of the wet gas compressor—one of the many pieces of equipment overhauled.

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Refinery Manager R. C. Barton, left, and Chief Engineer J. C. McCarty look pleased at the progress made on the first major overhaul of the Anacortes Refinery's two-stage catalytic cracker, the first of its kind in the world. Using two stages instead of one increases gasoline yield from crude oil up to 15 per cent. Shell research developed the new process.

process was developed by Shell research.

In ordinary catcracking, the oil goes through just one stage of cracking where a fine sand-like solid material called catalyst is mixed with oil under high temperature (the catalyst speeds up the process of cracking the big molecules of oil so that they yield more of the lighter gasoline molecules). But in this single passage, some of the oil is cracked too much—into molecules too light for gasoline—or is not cracked enough.

The two-stage process reduces overcracking or undercracking and thus produces more gasoline. It also makes the refinery's operations more efficient.

A major modification made to the Anacortes catcracker during the turnaround involved installing lines and equipment to be used after mid-1958 when the refinery system will include an alkylation unit. This unit will be able to manufacture about 33 million gallons of aviation gasoline a year to serve growing commercial and military needs of the Pacific Northwest.

Meanwhile, the Anacortes catcracker is back to its normal steady routine. But already some planning has started on the next overhaul, which will probably be sometime in 1959 ●

His hard hat protected Operator No. 2 W. E. Morris, left, when the wrench he holds fell from a level above. He discusses the incident with E. S. Quillen, Head Fire and Safety Inspector. The hat maintained the refinery's safety record—230 days without a lost-time injury when the turnaround was completed.

news and views

PRESIDENTIAL ADVISOR

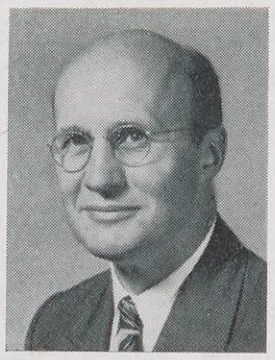
J. H. DOOLITTLE

J. H. Doolittle, Vice President and Director of Shell Oil Company and a retired lieutenant general of the United States Air Force, was named recently to the President's Science Advisory Committee.

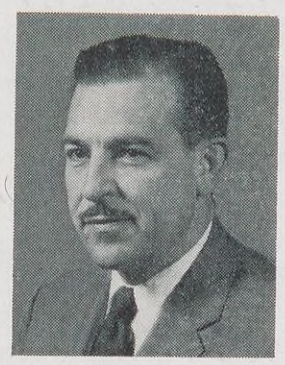
The 17-member committee, organized initially under the Office of Defense Mobilization, now will work directly with the White House in advising President Eisenhower.

Lt. Gen. Doolittle also is chairman of both the Air Force Scientific Advisory Board and the National Advisory Committee for Aeronautics. He is a member of several national committees including the President's Board on Foreign Intelligence and the Defense Science Board.

HONOR APPOINTMENTS



D. B. LUTEN



J. A. SAMANIEGO

Two scientists of Shell Development Company's Emeryville Research Center have been honored by the American Chemical Society and the American Institute of Chemical Engineers.

The men are D. B. Luten, Supervisor, Physical Chemistry, honored by the A.C.S. and J. A. Samaniego, Engineer, Oil Process Engineering, honored by the A.I.Ch.E.

They were chosen by their respective societies to represent them at the National Conference of the U. S. National Committee for UNESCO (United Nations Educational, Scientific and Cultural Organization) at San Francisco early in November.

MAN OF THE MONTH

CAPT. E. R. VORENKAMP

Capt. E. R. Vorenkamp, Special Assistant to Manager, Transport and Materials, New Orleans Area, was named Man of the Month for October by *Offshore Drilling* magazine.

The magazine cited Vorenkamp as a man "passionately dedicated to safety at sea." It noted specifically his campaign for construction of special shelters along the Gulf Coast for protection from hurricanes.

Captain Vorenkamp designed the shelter for those trapped in hurricane-stricken areas and has also pressed the Louisiana legislature and local communities to provide shelters. He has made his shelter design available at no cost to anyone who wishes to use it.

The magazine added: "So, for his long and vigorous fight for safety, for his sound and practical knowledge of the means of accomplishing it, for his own vital integrity and unselfish devotion to the cause of safety at sea and, on land, protection from the sea, and for his twinkling and irrepressible good humor throughout his fight, *Offshore Drilling*, nominates Captain E. R. Vorenkamp as our 'Man of the Month,' a man whose program of safety will live for years."

ELECTED TO OFFICE

C. H. WAGER

C. H. Wager, Traffic Department Manager, Head Office, has been elected president for 1958 of the Transportation Club of the Petroleum Industry, a national organization of oilmen engaged in transportation.

A member of the club for 10 years, Mr. Wager has previously served as a vice president and director. Among the club's activities are meetings dealing with transportation problems and the publication of material useful in the field.

SHELL PEOPLE in

SHELL OIL COMPANY EXPLORATION AND PRODUCTION ORGANIZATION

H. S. M. Burns, President of Shell Oil Company, has announced changes in the Exploration and Production Organization, including the election of two new vice presidents, to diversify the experience of the Organization's top management. New vice presidents are R. W. Bond, who has become Vice President in charge of the Tulsa Area, and R. E. McAdams, who has become Vice President—Exploration, with headquarters in New York. J. E. Clark, formerly Vice President in charge of the Midland Area, has become Vice President—Production with headquarters in New York. C. P. Bristol has moved from Tulsa as Vice President in charge of the Midland Area. All changes were effective January 1.

R. W. BOND

R. W. BOND has been appointed Vice President in charge of the Tulsa Exploration and Production Area. Mr. Bond, who received a Bachelor's degree in mining engineering from the University of Pittsburgh, joined Shell Oil Company in 1925 as an Equipment Engineer at Tonkawa, Okla. After holding a variety of engineering positions in the Tulsa Area, he was named Production Manager in Tulsa in 1937. In 1946, after a military leave of absence, he became Director of Production for the former East-of-Rockies Region at Houston. He became Manager—Production with headquarters in New York in 1951.

R. E. McADAMS

R. E. McADAMS has been named Vice President—Exploration. Mr. McAdams, who received a Master's degree in geology from Texas A&M College, joined Shell Oil Company in 1936 as a Geologist at Shreveport, La. In 1946 after geological assignments at San Antonio and Houston, Tex., and a three-year military leave of absence, he was named Senior Geologist of the Texas-Gulf Exploration District of the Houston Area. The following year he became Exploration Manager of the Tulsa Area, and in 1953 moved to the Denver Area in the same capacity. He was named Manager—Exploration, with headquarters in New York, in 1955.

J. E. CLARK

J. E. CLARK has been named Vice President—Production. Mr. Clark, who received a Bachelor's degree in engineering from Stanford University, joined Shell Oil Company in 1932 as a Roustabout at Ventura, Calif. After various engineering assignments, he was named Superintendent of the Los Angeles Basin Division in 1944. In 1948 he became Division Manager of the Coastal Division of the Pacific Coast Area, and held the same position in the Rocky Mountain Division at Casper, Wyo., in 1951. He was appointed Production Manager of the Denver Area in 1953, and became Vice President in charge of the Midland Area in 1954.

C. P. BRISTOL

C. P. BRISTOL has moved from Tulsa to be Vice President in charge of the Midland Exploration and Production Area. Mr. Bristol, who received a Bachelor's degree in petroleum engineering from the University of Oklahoma, joined Shell Oil Company in 1930 as a Rodman at Kilgore, Tex. He was named Division Production Manager of the East Texas Division of the Houston Area in 1944, and in 1950 was named Production Manager of the Houston Area. He went to the Tulsa Area in the same position in 1951. He was appointed Vice President in charge of the Tulsa Area in 1954.

PLE *in the news*

R. K. BURNS

SHELL CHEMICAL CORPORATION

R. K. BURNS has been named Assistant Controller, Assistant Treasurer and Assistant Secretary of Shell Chemical Corporation, succeeding John Rysdorp, who retired December 31 after 36 years of Shell service. Mr. Burns joined Shell Oil Company in 1931 as a Clerk at the Wood River Refinery. He was named Chief Accountant in 1946 and Office Manager in 1948. The following year he transferred to Head Office as an Auditor in the Financial Organization. He became Assistant Manager of the Head Office Refinery Accounting Department in 1950. Mr. Burns joined Shell Chemical Corporation in 1953 as Assistant Manager of the Treasury Department, and two years later was named Manager of that Department.

J. T. KIRK

J. T. KIRK has been named Manager of Shell Chemical Corporation's Treasury Department, succeeding Mr. Burns.

Mr. Kirk, who received a Bachelor's degree in accounting from the University of Texas, joined Shell Oil Company in 1942 at the Houston Refinery. He was on military leave of absence from 1943 until 1946. In 1947, he became Chief Accountant at the Refinery, and three years later was transferred to Head Office as an Auditor. In 1952 he was named Treasury Manager of the Minneapolis Marketing Division, and in 1956 he became Assistant Manager of the Head Office Marketing Accounting Department.

D. K. LAIDLAW

SHELL OIL COMPANY TRANSPORTATION & SUPPLIES ORGANIZATION

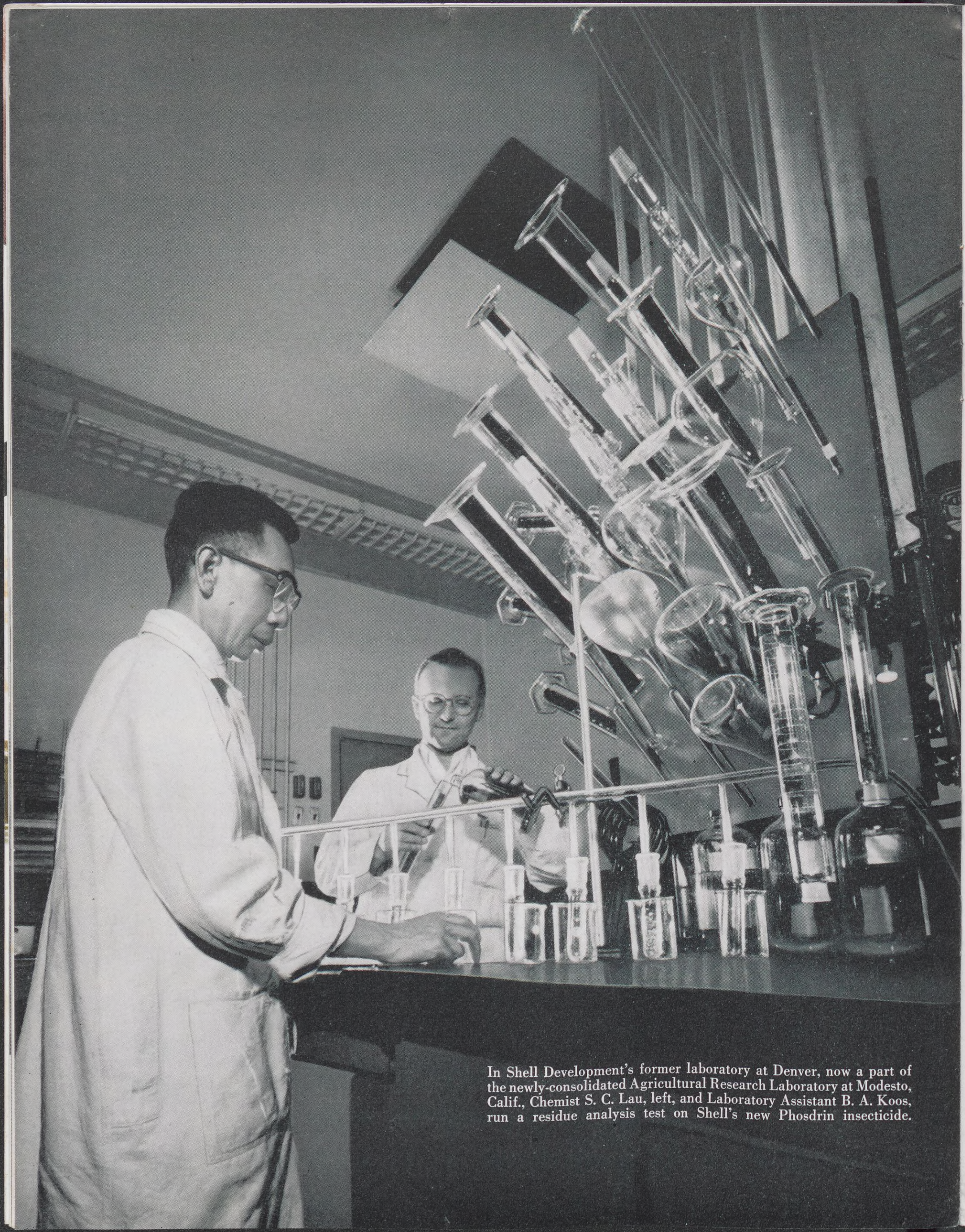
D. K. LAIDLAW has been named Manager of the Marine Department of Shell Oil Company's Transportation and Supplies Organization, succeeding W. B. Case, who retired December 31 after 35 years of Shell service.

Mr. Laidlaw, who attended the Royal Naval Colleges at Osborne and Dartmouth, England, began his career in the Royal Navy during World War I. In 1926 he came to the United States and was associated with Stone and Webster or its affiliated companies until 1940. He served for five years with the Royal Canadian Navy in World War II, and retired with the rank of Captain. He joined Shell Oil Company in 1945 as Assistant to the Vice President-Marine Transportation, in Head Office. The following year he was named Assistant Manager of the Marine Transportation Department.

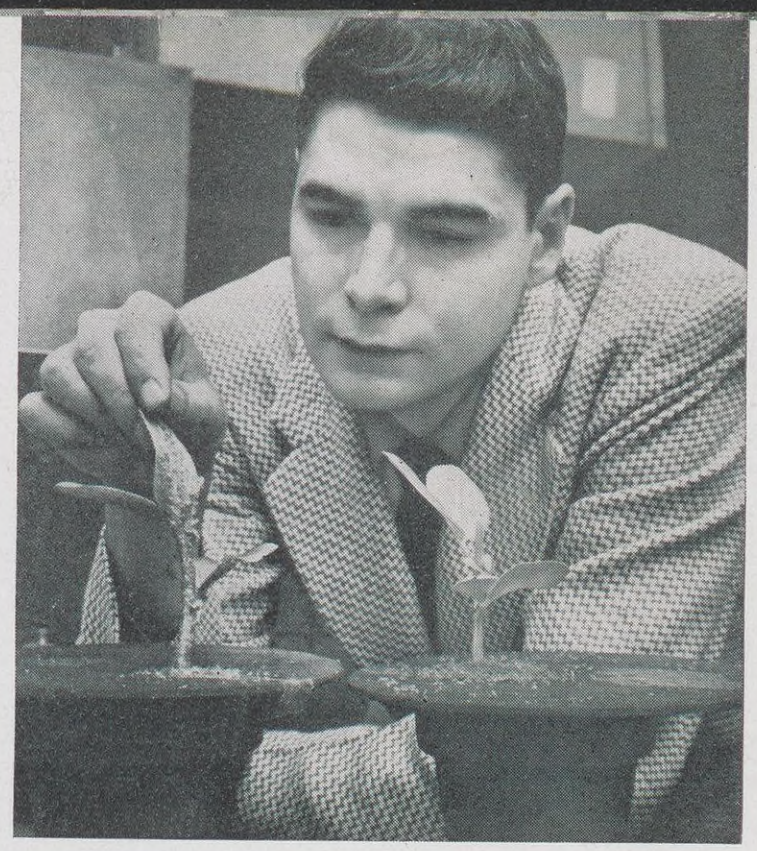
M. W. TAMELE

SHELL DEVELOPMENT COMPANY

M. W. TAMELE has returned to Shell Development Company's Emeryville Research Center from a special assignment with Koninklijke/Shell Laboratorium, Amsterdam, the Netherlands. He has been appointed Research Consultant, a new staff position corresponding in status to the line classification of Director. Mr. Tamele will report to the Vice President, Oil and Chemical Research Division, will serve as a general consultant in such fields as colloid chemistry and catalysis and will take part in other special activities of interest to the Research Division. Mr. Tamele, who holds a Doctor's degree from the University of Prague, joined Shell Development in 1929 as a Research Chemist. He was named Associate Director of Research in 1945.



In Shell Development's former laboratory at Denver, now a part of the newly-consolidated Agricultural Research Laboratory at Modesto, Calif., Chemist S. C. Lau, left, and Laboratory Assistant B. A. Koos, run a residue analysis test on Shell's new Phosdrin insecticide.



Entomologist R. A. Cory studies a bean plant covered with aphids. The plant on the right had been covered with the bugs but a short spray of Phosdrin insecticide killed them quickly. Phosdrin can be applied up to 24 hours before harvesting.

NEW ALLY FOR FARMERS

After years of research and testing, a new Shell Chemical Corporation insecticide is ready for market

A FARMER with lights rigged to his tractor works late at night spraying his cabbage fields with insecticide. He is planning to harvest his crop in the next day or so—free of the fear of insect damage before harvest and also free of restrictions against spraying close to harvest.

This scene is the symbol of an agricultural revolution brought by the introduction of a new Shell insecticide, the result of a total of more than five years' intensive research and testing—and more than one million dollars investment—by Shell Development Company and Shell Chemical Corporation.

Before the introduction of Phosdrin* insecticide, farmers had to stop spraying their vegetables several days before marketing so there could be no chance of any insecticide residue remaining when the vegetables went to market. But too often insects moved in during those precious days before harvest and ruined the crops.

Now, Phosdrin insecticide can be applied in most cases as late as one day before harvest with no danger of long-lingering residues. The insecticide is decomposed inside the plants and also leaves the plant surface as a vapor. This effective clean-up protects the crop from insects up to harvesting.

Shell Chemical put Phosdrin insecticide on the market for the first time in 1956 under a temporary label issued by the United States Department of Agriculture. A permanent label now has been granted for the insecticide's commercial use on a wide variety of fruits, vegetables and field crops. Phosdrin insecticide is being produced in a new unit at Shell Chemical's Denver Plant and made available in most parts of the country to commercial growers. (It is not available to home gardeners because strict application procedures must be followed to avoid contamination of skin and clothing.)

*Trademark Shell Chemical Corporation.

NEW ALLY FOR FARMERS

Like most phosphate insecticides, Phosdrin insecticide is highly toxic to man. All users have been advised of its potential danger, of the necessary safety precautions for its handling, and of the remedies to take in case of mishap.

Phosdrin insecticide is a new type of bug killer. Shell's aldrin, dieldrin, endrin and D-D* soil fumigant are all chlorinated pesticides; Phosdrin insecticide is an organophosphorus material (as is methyl parathion insecticide, another new Shell product, for control of boll weevil on cotton plants).

The unusual characteristic of Phosdrin insecticide compared with the earlier Shell insecticides is that it enters into a plant's system and is carried to all parts of the plant. Thus, the plant gets a built-in defense and wherever a sucking insect taps the plant, it swallows a lethal dose of the insecticide.

The job of bringing most insecticides from the research laboratory to a farmer's field is long, involved and costly; Phosdrin insecticide was no exception. Here are the main steps that usually must be taken, though not necessarily in this order:

1. Synthesis and screening — This involves experimenting with at least hundreds and sometimes thousands of chemical compounds to find just one new bug-killing compound, and then determining how well it kills.

2. Patent matters—A study is made to determine whether the compound is patentable; patent applications may be filed. When commercialization seems likely, the possible effect of patents owned by others and Shell must be investigated.

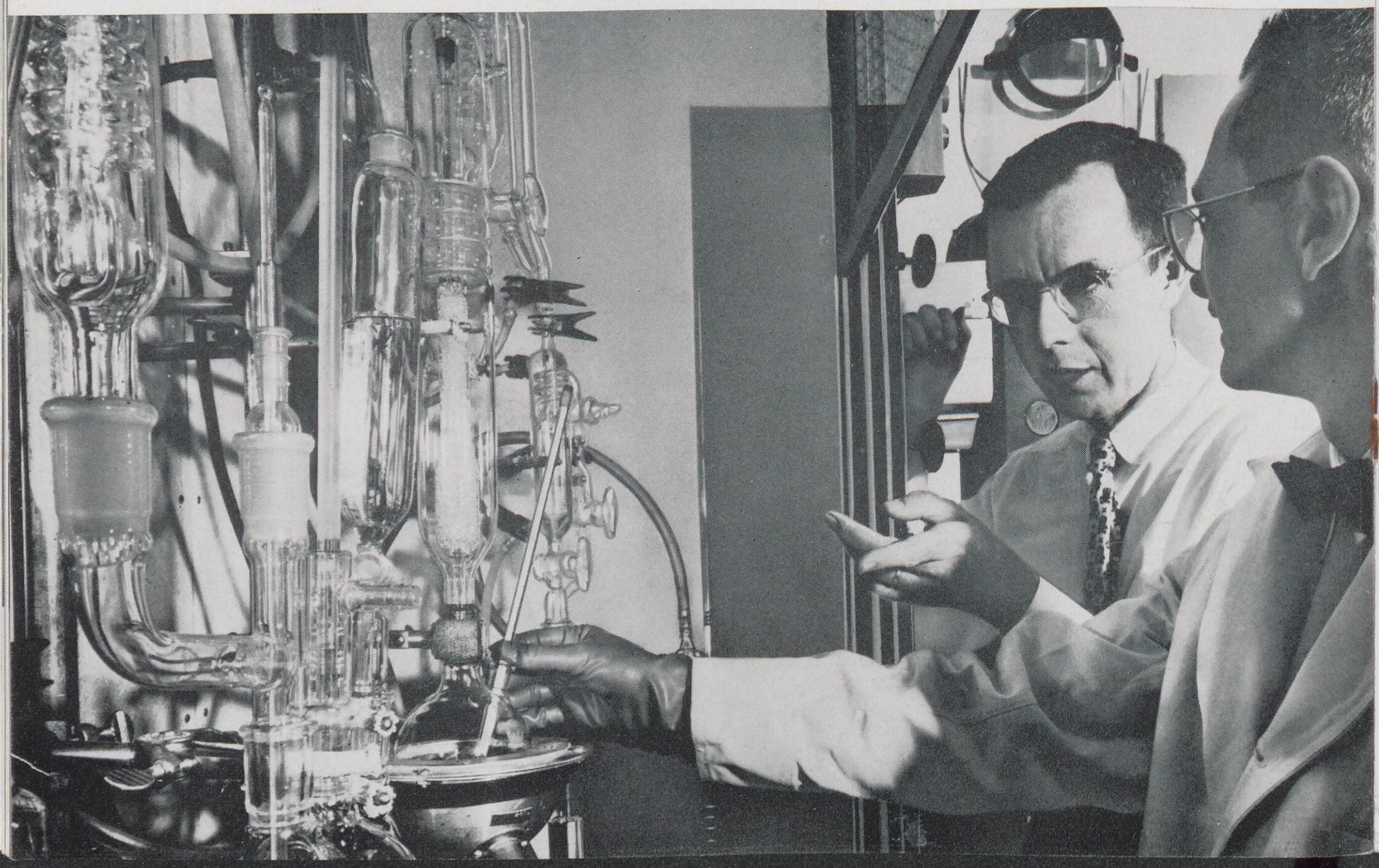
3. Field tests—After the laboratory stage, the insecticide must be tested in the field. Some of these tests are carried out at the Modesto Agricultural Research Laboratory and others are done through land-grant colleges and field stations of the U. S. Department of Agriculture.

4. Pilot Plant—If the tests are successful, a pilot plant usually is built at this stage to obtain enough insecticide to make further extensive tests.

5. Residue and Flavor Tests—Hundreds of tests must be made on various crops to learn how much of the insec-

*Trademark Shell Chemical Corporation.

In developing an insecticide, an important step is deciding which formulation will be most useful—liquid, powder or concentrate. Here, Dr. R. R. Whetstone, left, Department Manager-Organic Chemicals and Chemist L. F. Ward, Jr., work with formulation testing equipment at Denver. Phosdrin insecticide is a pale yellow liquid which farmers mix with water to spray.



More than 1,000 residue analyses were made on 50 different crops in testing the insecticide. Here, Laboratory Assistant M. E. Coats, prepares cabbages for a test. The maximum residue permitted is one part in 1,000,000 for Phosdrin insecticide.

ticide—measured in parts per million —is left on the plant and whether the insecticide affects the flavor of the crop.

6. Toxicity and Biological Tests—Data must be compiled through tests to learn what effect the insecticide has on laboratory animals, what dosage should be used—and in general, to insure that the insecticide can be safely used.

7. Establishing tolerance—Safe residues of insecticidal chemicals resulting from applications to plants for pest control are determined by the United States Food and Drug Administration following residue determinations and toxicity studies.

8. Label Registration—All the information gathered must be put together for submission to the U. S. Department of Agriculture in a petition for a label that will permit the insecticide to be marketed. Approval must be obtained for each use of the insecticide.

9. Formulation — This step determines in what formula — liquid, powder, concentrate, or other form—it should be sold to be most useful. Also a decision must be made on how the insecticide should be packaged for shipment.

Not until all these steps have been taken can the insecticide be marketed generally. Marketing is another program in itself involving advertising, publicity and direct contact with formulating companies who market the insecticide under their own brand names.

The development of Phosdrin insecticide included all these main steps. In 1945 and 1946, Shell Development's Emeryville Research Center began a study of phosphate insecticides. After a long series of synthesis and screening experiments, in which Shell Development's Modesto Agricultural Research Laboratory participated, a chemical compound called OS 2046 emerged.

An intensive study of OS 2046 was begun by Shell Development's former Denver Laboratory (now a part of the newly-consolidated Modesto Laboratory) in 1953. The following year about 400 pounds of the material were sent out in small amounts for field testing. Reports indicated that OS 2046, renamed Phosdrin insecticide, would be effective and the decision was made to continue its development.

Further field testing and analysis were made in 1955 and in 1956 the insecticide was made available to commercial growers for the first time under a temporary label.

Finally, last October, residue tolerances for Phosdrin insecticide were established by the Food and Drug Administration and labels for the product were accepted by the United States Department of Agriculture.

Now, after a total of more than five years of intensive work, the pale, yellow odorless liquid called Phosdrin insecticide is being mixed with water and sprayed on crops around the country.

In the farmer's fight against insects —which take an estimated toll of some $4 billion worth of crops every year— Phosdrin insecticide is a new and powerful ally that gives protection to within hours of harvest ●

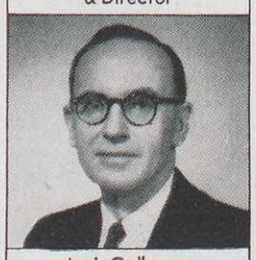
Shell Oil Company

January—1958

Assistant to President

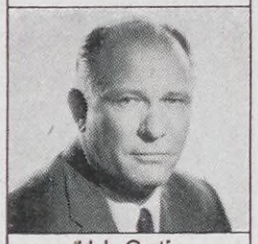
P. H. Swinchatt

Executive Vice President & Director



A. J. Galloway

Vice President Public Relations



H. L. Curtis

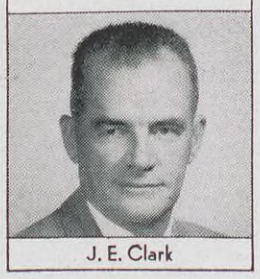
Vice President Personnel & Industrial Relations

E. H. Walker

Vice President Exploration

R. E. McAdams

Vice President Production



J. E. Clark

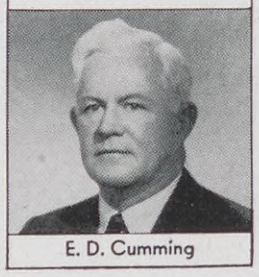
Vice President*

P. L. Kartzke

Vice President In Charge of Denver Area

W. A. Alexander

Vice President In Charge of Houston Area

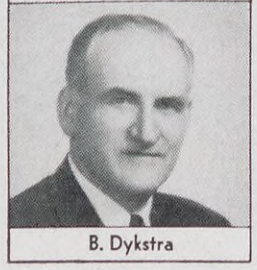


E. D. Cumming

Vice President In Charge of Midland Area

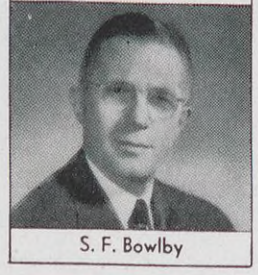
C. P. Bristol

Vice President In Charge of New Orleans Area



B. Dykstra

Vice President In Charge of Pacific Coast Area



S. F. Bowlby

Vice President In Charge of Tulsa Area

R. W. Bond

* On loan to Shell Oil Company of Canada, Ltd., for their exploration and production operations.

Management Organization Chart

President &
Chairman Exec. Com.
of the Board of Dirs.

H. S. M. Burns

Corporate
Secretary

J. A. Horner

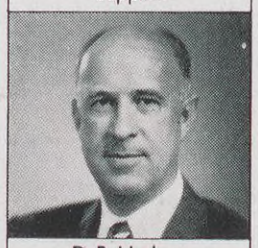
Vice President
& Director

J. H. Doolittle

Executive
Vice President
& Director

M. E. Spaght

Vice President
Transportation &
Supplies



D. B. Hodges

Vice President
Manufacturing

M. P. L. Love

Vice President
Marketing

J. G. Jordan

Vice President
& General Counsel

W. F. Kenney

Vice President
Finance

A. G. Schei

General Manager
Purchasing-Stores

W. H. Bratches

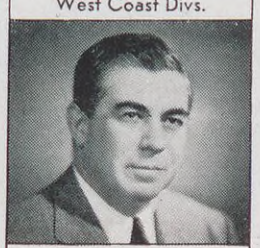
Vice President
In Charge of
East Coast Divs.

J. L. Wadlow

Vice President
In Charge of
Midwest Divisions

P. C. Thomas

Vice President
In Charge of
West Coast Divs.



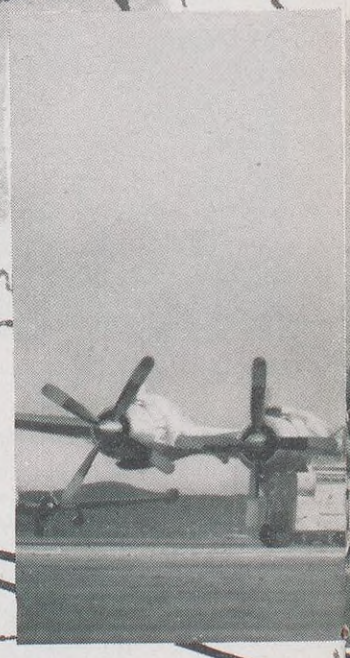
S. Eddy

Controller

A. A. Buzzl

Treasurer

C. C. Combs



AIRPORT IN ESKIMO-LAND

At Frobisher Bay on Canada's Baffin Island, Shell of Canada fuels Pan American's DC-7s on their way to London and Paris

A telephone call last July 19 from Pan American World Airways to Shell's Aviation Department in New York climaxed a campaign to win a 2,100,000 gallons-a-year aviation fuel contract.

The call accepting Shell's bid on the two-year contract also spurred a race against time to build refueling facilities at Frobisher Bay on Canada's Baffin Island—northeast of Hudson Bay and only 200 miles south of the Arctic Circle.

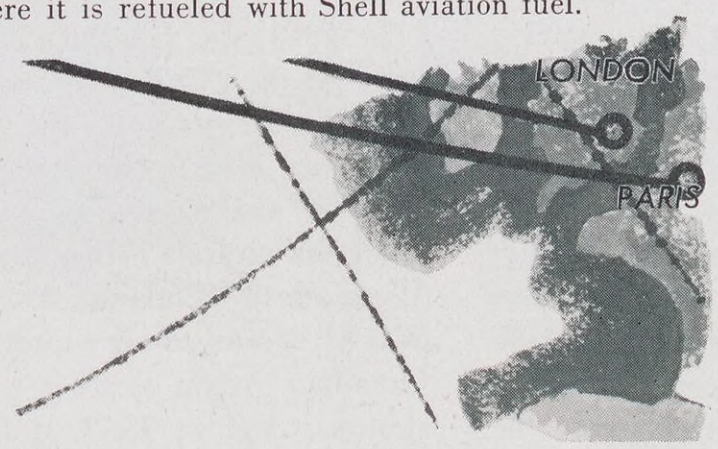
After receiving the call, A. C. Williams of the Aviation Department phoned the news to Aviation Manager C. H. Stover of Shell Oil Company of Canada, Limited, in Toronto.

About four months previously, Shell of Canada took a running start in the race when several international airlines showed an interest in Frobisher Bay as a refueling stop for the expanding transpolar traffic between the U. S. West Coast and Europe.

Shell of Canada made a decision then: to get business in the future at Frobisher it must prepare immediately for the opening of commercial aviation there—even though no contract was in hand.

A budget of about $300,000 was approved, steel for a storage tank at Frobisher was ordered and plans were made for obtaining refueling trucks and other necessary equipment.

Pan American World Airways' first passenger flight from San Francisco to Paris stops briefly at Frobisher where it is refueled with Shell aviation fuel.

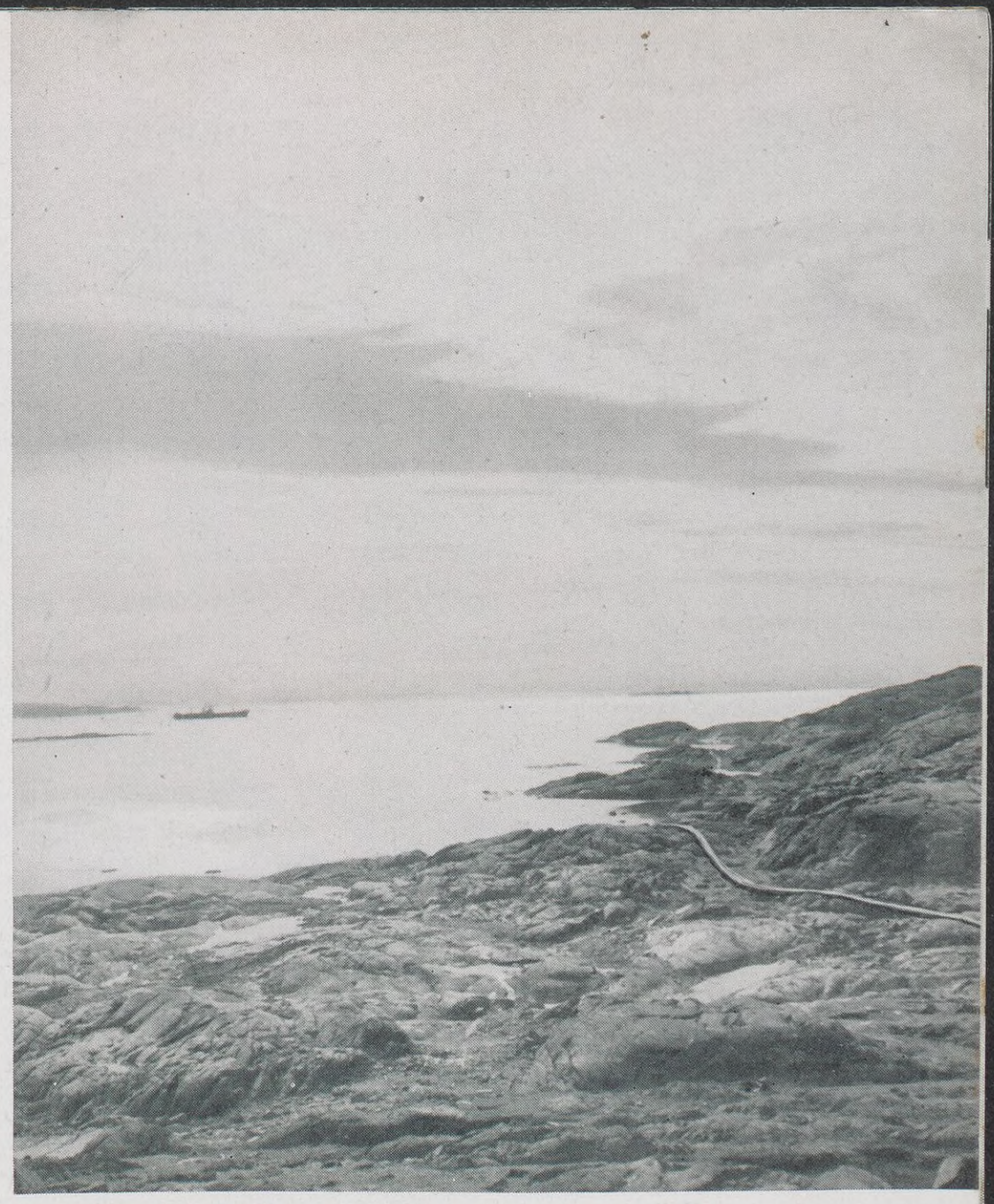


Taking this calculated risk was necessary for two major reasons: one, steel must be ordered far in advance of delivery; and two, Frobisher Bay is closed by ice except for only about 10 weeks a year —from about August 1 to October 15.

The planning paid off. When Pan American asked for a bid on July 15, Shell was in a position to answer within just three days and—when the bid was accepted — to have facilities operating before freeze-up at Frobisher. The results flowed from cooperation between Shell of Canada and Shell Oil; in this case, Shell Oil, being in close contact with Pan American's Head Office, handled direct negotiations and Shell of Canada is carrying out the contract.

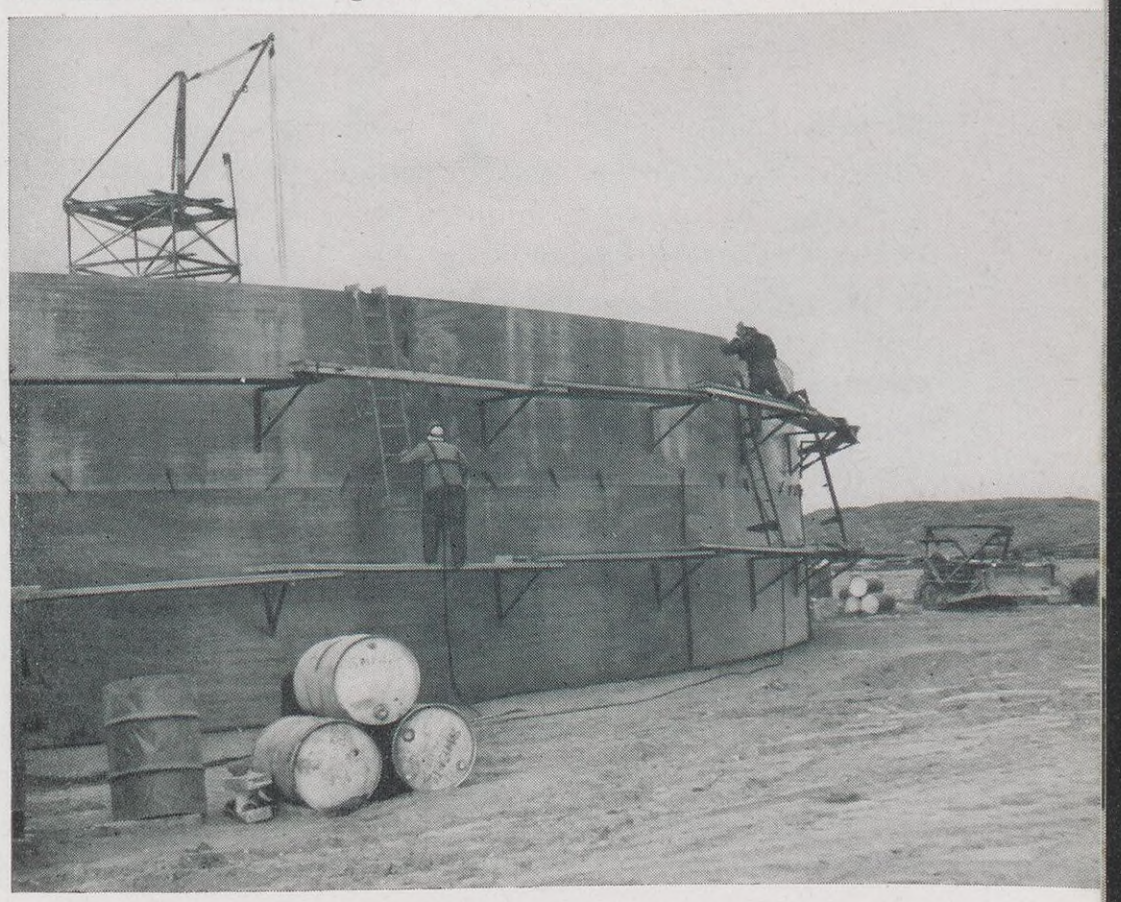
The airport in Eskimoland is an ideal refueling stop because it is almost exactly halfway between San Francisco and Paris by the Great Circle route, the shortest flying distance between the two points. (The distance from San Francisco to Paris via Frobisher is almost 600 miles less than via New York.) Besides, despite 40-below-zero winter temperatures, Frobisher's weather conditions are almost perfect for airline operations—the base is closed down by bad weather on the average only 74 hours a year.

Pan American runs four round trips a week from San Francisco, Los Angeles, Seattle and Portland—



Aviation fuel from Houston Refinery is pumped from ship in the bay through a rubber pipe, seen snaking over rocks at the right, to the Shell of Canada tank, shown below, under construction.

Building the Shell of Canada 80,000-barrel tank at Frobisher Bay cost about $165,000—almost twice the usual cost for such a job. The tank must hold enough to serve Shell customers for 10 months.



An Eskimo woman in a village near the Frobisher Bay air base, with a baby in the hood of her parka, makes dog harnesses from strips of seal skin.

through Frobisher to London and Paris. (The number of weekly round trips may be increased to seven by next spring.) The United States Air Force and the Royal Canadian Air Force also use the base. Trans World Airlines and Canadian Pacific Airlines stop there. Other airlines may soon be using Frobisher; they are potential Shell customers.

The fuel supply problem at Frobisher is tied tightly to the freeze-up. Since the bay is open to ocean-going tankers little more than two months a year, enough fuel must be stored to cover the remaining 10 months.

To supply Pan American's DC-7s, which may take up to 6,000 gallons at a refueling, Shell of Canada built an 80,000-barrel (3,360,000 gallon) storage tank. Getting the steel for the tank ashore at Frobisher was a big problem in itself. There are no deep-water docks so freighters must unload their cargoes onto barges about two miles from shore.

Besides the steel, Shell of Canada had to ship two refueling trucks, a lubricating oil unit and materials for a garage and office building.

Getting fuel ashore also is a real problem. Shell has shipped by sea-barges which can sail in close enough to pump their product into a rubber offshore line, supported by empty oil drums floating on the bay. Large tankers cannot move in close enough to pump into the line so must discharge their product into lighters which then transfer it to the offshore line. The distance from the Shell tank to the airport is about one mile. The refueling trucks work between the tank and the airport.

A crew of five Shell of Canada men, all experienced in refueling, now are at Frobisher to provide 24-hour service for Pan American. They handle aviation fuel that was manufactured at the Houston Refinery (Shell of Canada's Montreal Refinery does not make the fuel required — 115/145 Aviation Fuel). The lubricants supplied are AEROSHELL® 100, whose base stocks are manufactured at the Wood River Refinery and are blended at the Montreal Refinery. The fact that Shell was able to supply a remote airport with fuel and lubricants on short notice highlights one of the advantages of an integrated oil company.

The distances from Houston and Wood River to Frobisher are great both in space and civilization. Only a few hundred people, most of them Eskimos, live in the treeless wilderness around Frobisher Bay. A model Eskimo village has been built in the last two years about three miles from the airport. Most of the Eskimos living there work as carpenters, tractor drivers and in other jobs at the airport or at local construction projects.

But just a few miles away, another Eskimo village carries on almost the same as it has for generations—hunting and trapping seal and walrus, caribou and polar bear for most of its livelihood.

The caribou, not so plentiful now, were probably easier to find in 1576 when English explorer Martin Frobisher sailed a 30-ton ship up the bay searching for a northwest passage to Cathay.

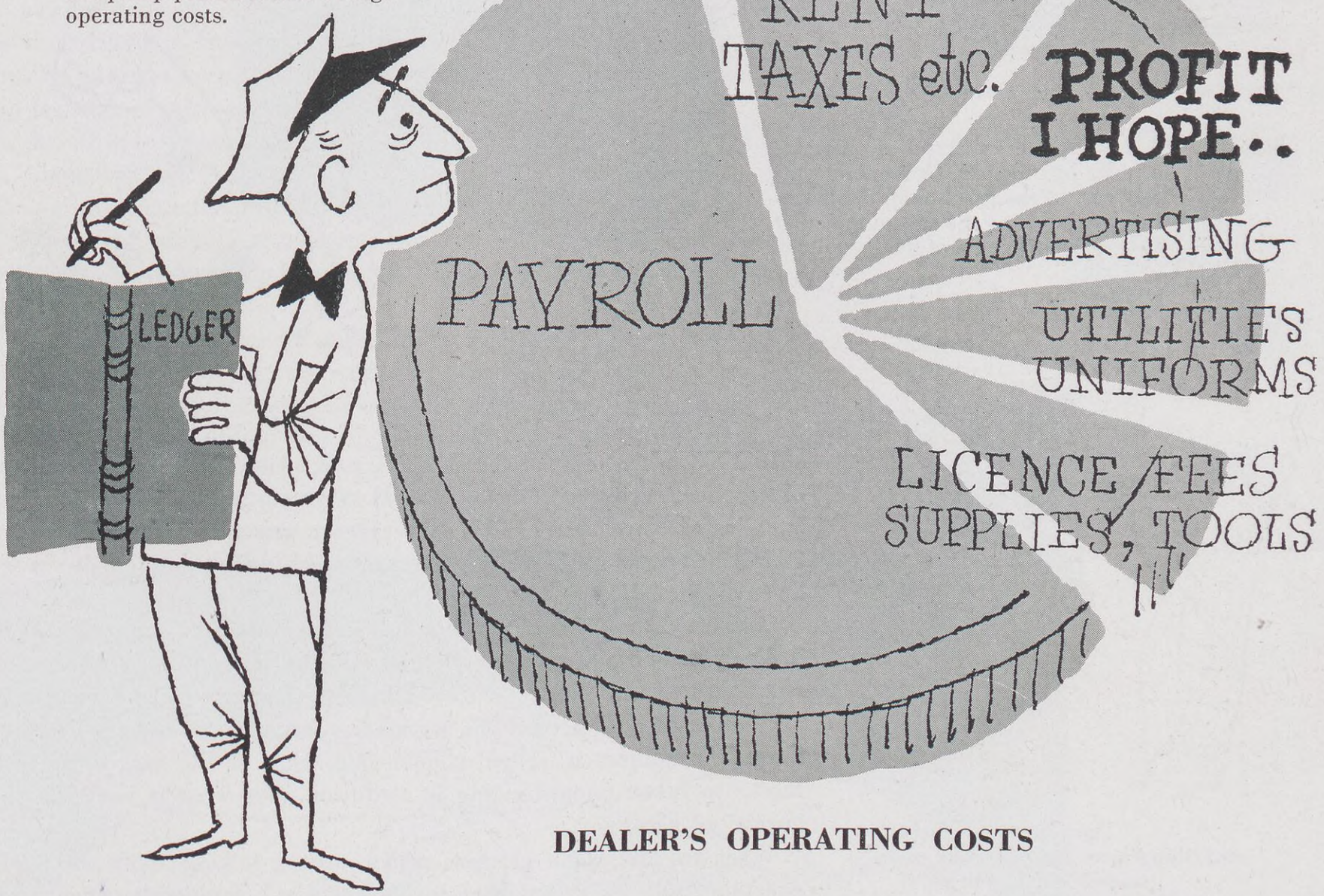
In 1914, the Hudson's Bay Company set up a fur-trading post on the bay. But it was not until 1942 that Frobisher Bay became important — when it was chosen as a refueling point for aircraft being ferried from Montreal to Scotland. After World War II, it was an air supply base for Canadian Arctic weather and radio stations. And in 1952, it became a construction supply center for the eastern section of the Distant Early Warning radar line built by Canada and the United States.

With the start of commercial aviation, Frobisher is experiencing another surge of construction. The Canadian Department of Transport has started a $500,000 program to expand the airport and its facilities; Pan American is building staff quarters and warehouses; and Shell of Canada expects its facilities will grow with increased trans-polar traffic.

Both Shell of Canada and Shell Oil Company have had experience in serving trans-polar routes. Shell of Canada refuels Scandinavian Airlines System polar flights at Winnipeg and Shell Oil serves SAS at Anchorage, Alaska and Los Angeles. (See "Flying the Polar Gateway," SHELL NEWS, July, 1957.)

Now, Frobisher Bay is added to the list of more than 2,000 airfields around the world where airlines can turn to Shell Aviation Service ●

The dealer's operating costs, especially rents and salaries, vary from place to place. Even if the wholesale gasoline price drops, the dealer may not be able to lower the pump price because of high operating costs.



DEALER'S OPERATING COSTS

WHAT PRICE GASOLINE?

Many factors must be considered in determining the price of gasoline. Here's how these factors work.

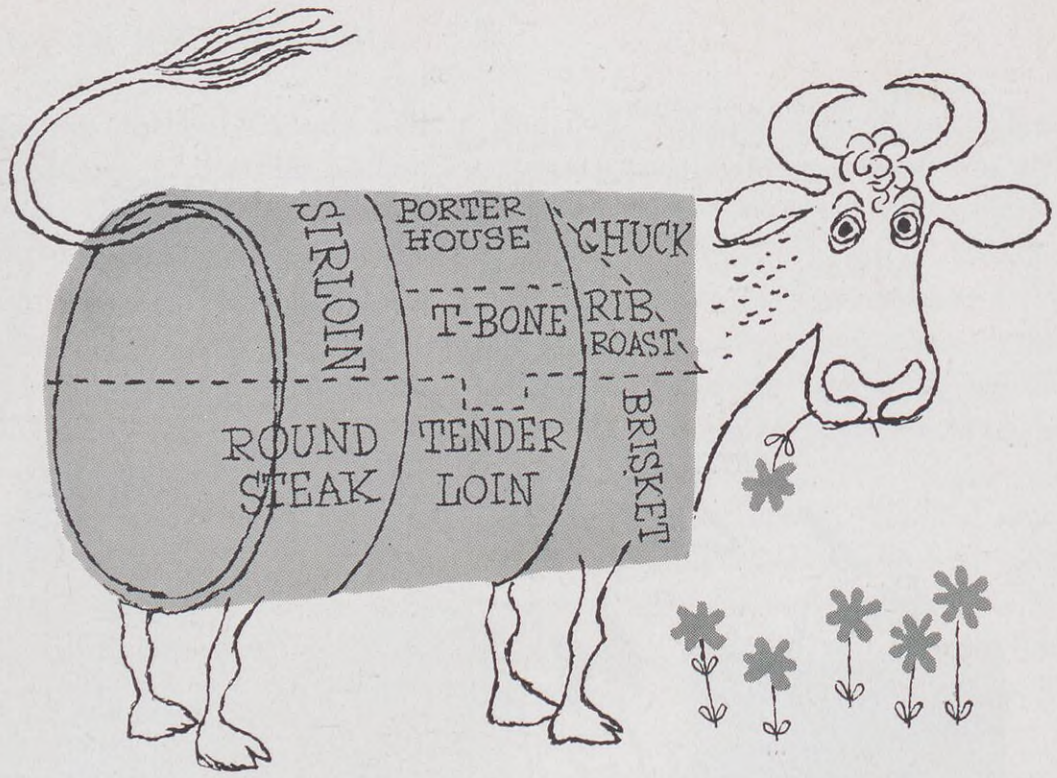
"THE people of this country must be prepared before long to pay at least $1 a gallon for gasoline."

This prediction was made nearly 34 years ago by a U. S. Senate Investigating Committee holding hearings on the oil industry. Today, the idea of $1-per-gallon gasoline appears somewhat ridiculous. But in 1923, when the Senate Committee made its prophecy, the possibility of dollar gasoline wasn't considered too far-fetched in some quarters.

Even before the congressional report, a manufacturer of electric trucks predicted that, "the scarcity of gasoline with its naturally increasing cost is making the operation of gasoline-propelled vehicles excessively expensive. . . ."

This "scarcity" of gasoline, it hardly needs pointing out, has never materialized. And as far as the "excessive" price of gasoline is concerned, let us see what has happened.

WHAT PRICE *GASOLINE?*



Like a steer, a barrel of oil yields a series of products. Determining the cost of the gasoline in the barrel involves knowing the cost of the other components of the barrel too.

The prices on nearly everything have steadily gone up since 1941. The price of gasoline, however, has gone up only half as much as the price of some staple food items.

In 1923, when most of the shouting took place, the average retail price of gasoline, exclusive of taxes, was 21 cents per gallon. Thirty-four years later—as of November 1, 1957—the average price, exclusive of taxes, was 22.04 cents a gallon. (And only two gallons of today's gasoline do the work three did in 1923.)

Obviously, the price of gasoline has not rocketed to $1 a gallon. Nor is it likely to—despite past predictions—thanks to continued improvement of efficiency in all phases of the oil industry, spurred by stiff competition.

One reason wild predictions are made concerning gasoline prices is that the whole subject is rather complicated. One of the biggest stumbling blocks to better understanding is confusion over what is included in the "price" of gasoline.

When we talk about gasoline prices, are we talking about the price of gasoline itself, or about price *including* taxes? It doesn't seem to make much sense to say, "an average 30.96 cents a gallon is too much to pay for gasoline" when the actual retail price is 22.04 cents, *plus* taxes. The average tax per gallon today is 8.92 cents. This tax goes to Federal (three cents),

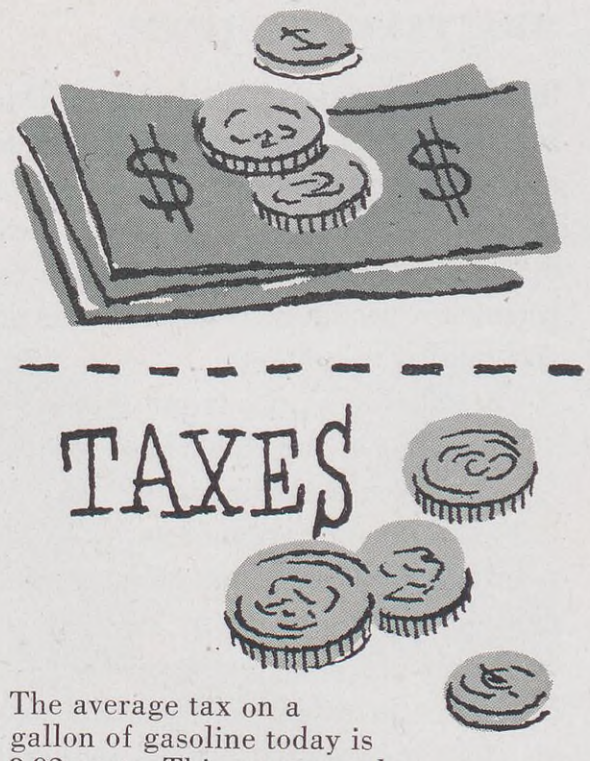
The individual dealer sets the price of gasoline at the pump. He may raise the price or lower it, as he sees fit. If the dealer lowers the price too much, however, he loses his profit. And if he sets the price too high, he loses customers.

state and local governments—not to the dealer or the oil company who supplies him. Since state taxes range from three cents in Missouri to about seven cents in several states, where you live determines in part how much you pay for gasoline.

Excluding taxes, the money you spend for a gallon of gasoline has to help pay for the work of many people and for the facilities and equipment they use. These include research laboratories, drilling rigs, pipe lines, refineries, storage tanks, service stations and a host of other large and small facilities requiring a huge outlay of capital.

In the oil industry as a whole, the payroll includes about 1,650,000 persons, about one out of every 37 persons in the U. S. working force. And in the next 10 years the oil industry will have to invest about $73 billion in facilities to find, produce, transport, refine and market the 38 billion barrels of petroleum we will need in that period. These costs naturally have an effect on the price of gasoline.

The supplier, or wholesaler, of gasoline sets what is called a tank-wagon price at which he sells it to the retailer. (The term tank-wagon goes back to the days when gasoline was delivered by horse-drawn carts.) There are several kinds of suppliers. Some suppliers merely buy petroleum products



The average tax on a gallon of gasoline today is 8.92 cents. This corresponds to about 40 per cent tax on each gallon sold.

Tank-wagon prices are posted in public regularly. The suppliers who set the tank-wagon price operate virtually in a goldfish bowl, as far as privacy is concerned. It also helps if the supplier has foresight and hindsight—and can forecast weather.

in bulk quantities from refiners. Others may buy crude, refine it, and sell the product to retailers. Still others, such as Shell, are completely integrated companies. Shell, for instance, looks for oil, finds it, produces it, transports the crude to refineries, manufactures gasoline and other petroleum products, transports the products to terminals, and finally, to market.

The supplier's price is subject to these economic factors:

1. Cost of raw materials
2. Manufacturing costs
3. Transportation costs
4. Supply and demand
5. Quality considerations
6. Margin of profit.

In the long run, the price at which suppliers sell to retailers is determined by the costs of bringing oil products from the well to the service station. But temporary imbalance in supply and demand may have a great effect on short-term variations in tank-wagon prices. A good example of the short-term power of supply and demand occurred in the summer of 1957. Several large refineries raised their gasoline price 2/10 of a cent per gallon in June to pay for a recent wage increase. But gasoline was in more than ample supply and the new price increase didn't stand up. Before the summer was over, gasoline was selling *below* the June price in most parts of the country.

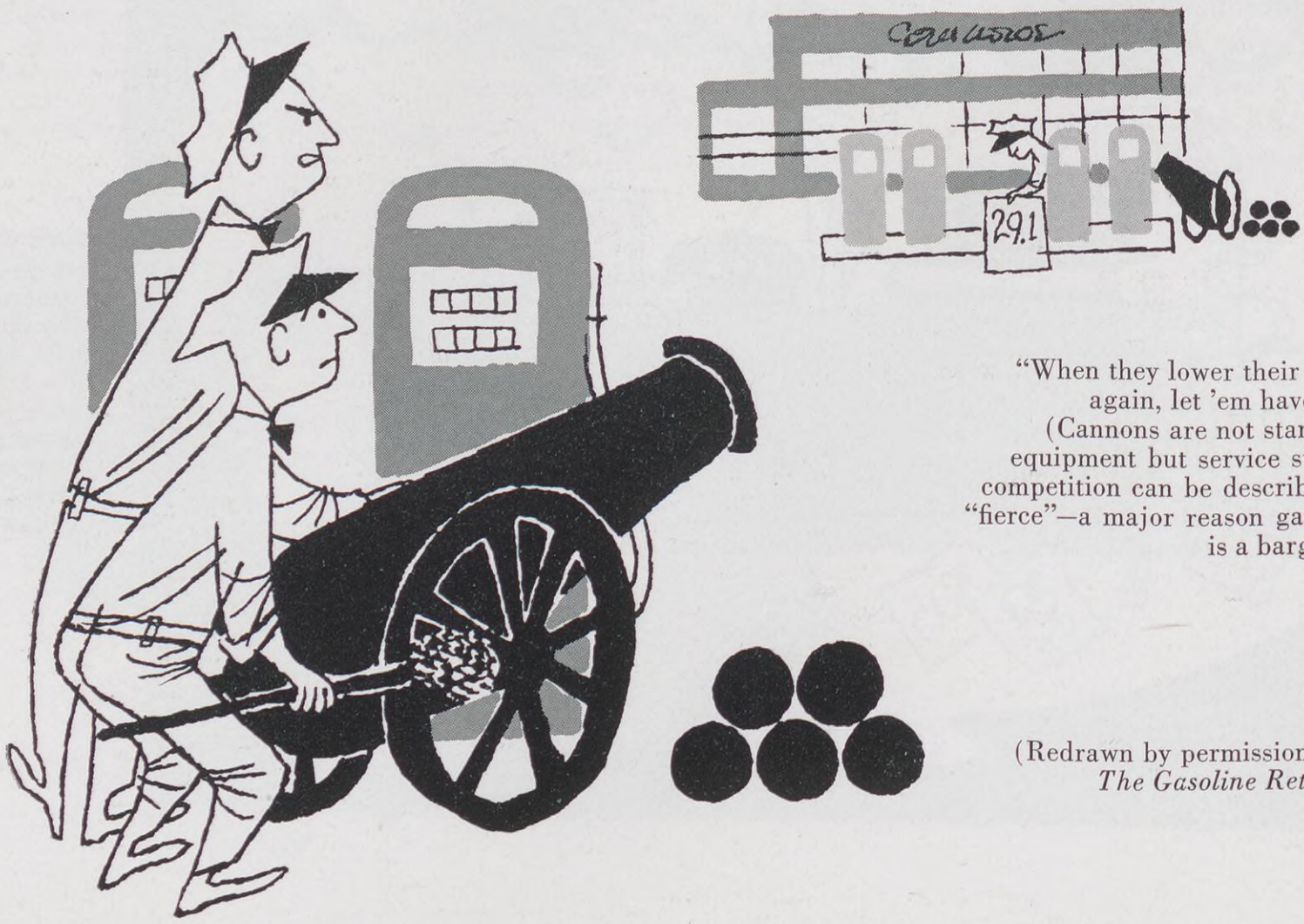
The supplier's main problem, therefore, is to set a competitive tank-wagon price. He must set it neither too high nor too low for the immediate competitive situation. This is the same problem facing the next link in the supply chain—the individual dealer who sells gasoline at retail.

The dealer's price, like the supplier's, is subject to the two contradictory pressures of 1) desire for profit, and 2) the need to meet competition.

Most gasoline dealers, just like neighborhood butchers, or corner druggists, are in business for themselves. They want to earn as much profit as possible, but they also must see that their stations are managed competitively. A dealer may raise the price of gasoline at his station, or lower it, at his discretion. But if he raises the price too high, he loses customers. And if he lowers it too much, he loses money.

When the tank-wagon price goes up, the dealer may, or may not, raise his price at the pumps. When the tank-wagon price goes down, it's also up to the dealer to decide whether or not to pass this saving on to his customers. Thousands of dealers, day after day, must decide the sale price of their gasoline in their local competitive markets. This fact, together with the differences in state and local taxes, explains why there is a range of retail prices.

How does the consumer affect the price of gasoline? It is his demand for high quality and service at a low price that spurs the competition for his patronage. This competition, in turn, forces people working in all phases of the oil industry to continually seek ways to cut their costs and at the same time make available better products. They must do so to operate successfully within the price limits and quality standards imposed by competition ●



"When they lower their price again, let 'em have it!" (Cannons are not standard equipment but service station competition can be described as "fierce"—a major reason gasoline is a bargain.)

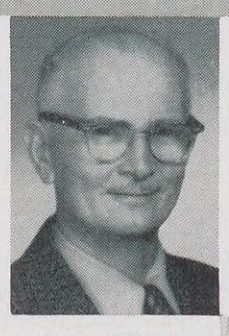
(Redrawn by permission from *The Gasoline Retailer)*

They have RETIRED

C. R. ARNOLD
Wood River Refinery
Engineering

F. M. BEALS
Wilmington Refinery
Distilling

H. A. BEEBE
Boston Division
Operations



H. R. BENNIK
Shell Chemical Corp.
Dominguez

T. K. BRISTOW
Wilmington Refinery
Engineering

E. BUTLER
Los Angeles Division
Operations

L. J. COOLEY
Boston Division
Operations

W. J. HART
New York Division
Operations

F. B. DARR
Wood River Refinery
Fire and Safety

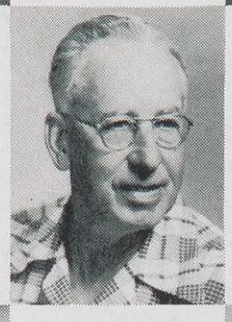
R. H. DE LANO
Wilmington Refinery
Thermal Cracking

R. GUTWEIN
Sewaren
Terminal

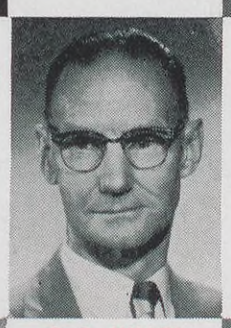
H. H. HIPPERT
San Francisco Division
Operations

S. F. LEFFLER
Wood River Refinery
Dispatching

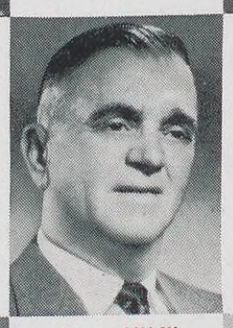
S. M. LOUDON
Boston Division
Sales



D. R. MacLEAN
Pacific Coast Area
Production



G. R. MILLER
Pacific Coast Area
Production



R. J. QUICK
Pacific Coast Area
Production

G. C. ROCKAFIELD
Wilmington Refinery
Treasury

M. C. RODRIGUEZ
Houston Refinery
Engineering

C. F. WAYMOTH
Wood River Refinery
Engineering

A. WHITLEY
Houston Area
Production

C. O. WOODMANSEE
Wilmington Refinery
Engineering

J. R. ZOELLER
Wood River Refinery
Engineering

SHELL *Coast to Coast*

M. L. Dry, above, fires an arrow from a moving "horse," an oil drum. Below, Dry is at right with a group of Diablo Bowmen. The others are, left to right, M. Rosengarten, his children Andy and Linda, J. T. Viera and Greg Dry.

WEST COAST ARCHERS

AN organization of archers that two Shell men helped start three years ago in California's Contra Costa County now has more than 100 members.

The organization is the Diablo Bowmen, which has members from several communities in the northern area of the county. Among its organizers were M. L. Dry of the Treasury Department and M. Rosengarten, Operator, both of Shell Chemical Corporation's Shell Point Plant. Now the club membership also includes Machinist F. S. Redfield and Craft Foreman J. T. Viera of the Martinez Refinery, Dry's son Greg, Rosengarten's son Andy and daughter Linda, and James Rushton, son of R. H. Rushton of the Martinez Chemical Plant Treasury Department.

The Bowmen lease a section of the Martinez Municipal Park for their private archery range with 28 targets at varying distances. Some are conventional bulls-eyes; others are life-size pictures of animals. As a novelty, the archers can ride a moving "horse" made of an oil drum while firing at the targets.

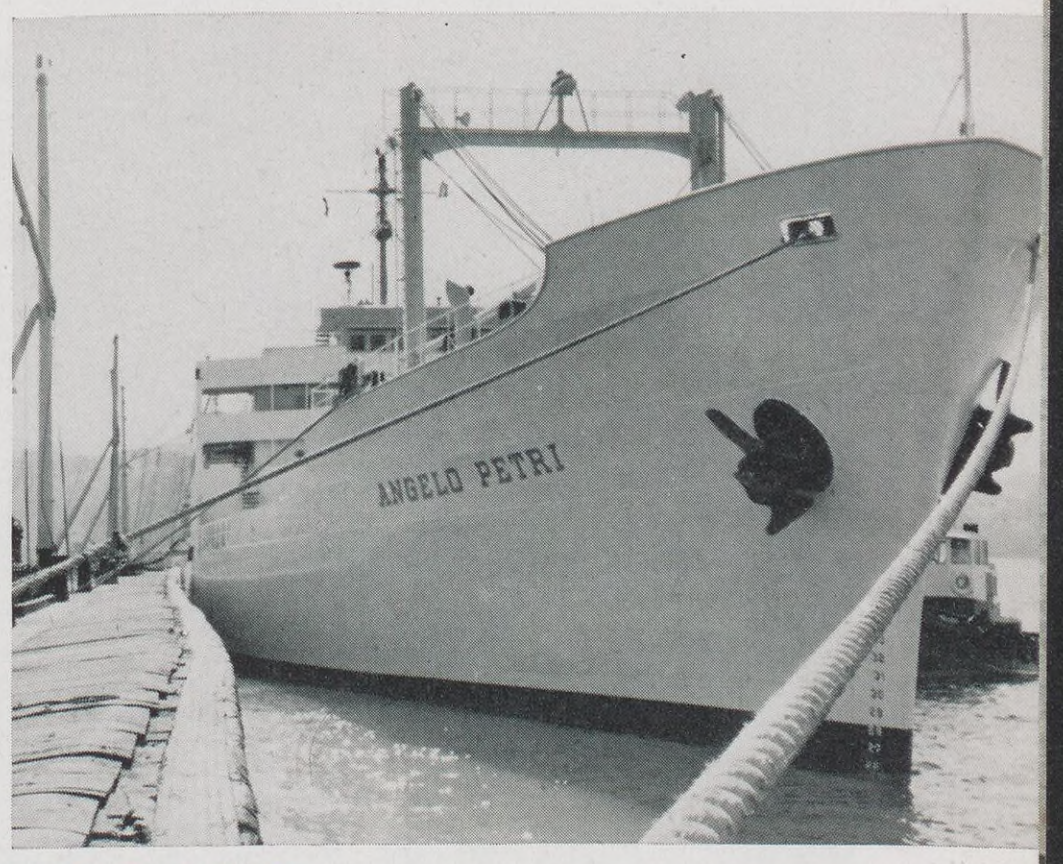
"Archery equipment has improved more in the last 20 years than in the previous 2,000," Rosengarten said. "If Indians had had a bow such as I shoot, the cavalry wouldn't have had a chance!"

PRAISED BY PLANNERS

This Shell service station in Sacramento, Calif., earned Shell's Sacramento Marketing Division a commendation from the City Planning Commission for blending the new station into one of the city's finest residential areas. The Commission said the station was "the outstanding example of how this Commission believes commercial property should be handled."

LIFE SAVER

Barbara Rolling, Nurse in the Denver Exploration and Production Area Office, was awarded the Red Cross Certificate of Merit for helping to save the life of an injured skier. She and two ski patrol members gave the skier first aid and brought him down in time to save his life.



WINE BY TANKER

The world's largest wine tanker, the S. S. Angelo Petri, made its maiden voyage last fall carrying nearly 2½ million gallons of wine from Stockton, Calif., to Houston and New York. Here it takes on 126,000 gallons of Shell marine oil at the Martinez Refinery to fuel its trip east.

BIRD BREEDERS

TWO Tulsa Exploration and Production Area employees have a hobby that is helping to make western Oklahoma a happy hunting ground.

R. M. Roberts, shown below at left, Maintenance Man in the Elk City District, and C. E. McClure, Operator in the Elk City Gas Plant, raise Coturnix, the European variety of quail, and release them in Beckham County fields. The Coturnix, pictured at left, is slightly smaller than the "bob-white" quail, and has no white markings; otherwise, the two types of quail are identical.

Roberts and McClure began their wildlife restoration hobby last July. Since then they have released more than 300 birds. They gather eggs from the prolific birds (one laid 130 eggs in 129 days) and hatch them in an incubator. They feed the chicks a special game bird chow two or three times a day until the birds approach full growth; then the feed schedule is cut back to once a day. When the birds are four to five weeks old, Roberts and McClure release them.

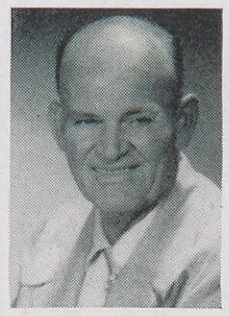
"We began the hobby to ease the demand for bobwhites in the Elk City vicinity," McClure said, "and we enjoy doing it." They have a state breeders' permit, but raise the birds without aid from any outside source.

Service BIRTHDAYS

Thirty-Five Years

E. A. BEBEAU
Pacific Coast Area
Production

B. G. BRAY
Pipe Line Dept.
Fellows, Calif.



L. F. BUSEY
Pacific Coast Area
Production

D. R. BUTLER
Martinez Refy.
Cracking

H. F. COSTA
Martinez Refy.
Compounding

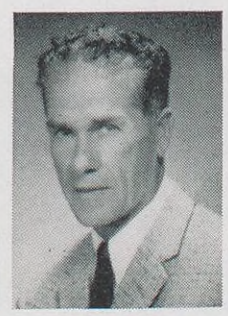
J. F. COURTNEY
Houston Area
Production

A. A. DUVALL
Martinez Refy.
Engineering

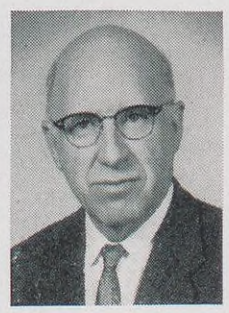
H. L. ELDER
Wood River Refy.
Distilling

I. GILLETT
Los Angeles Div.
Marketing Service

E. A. MOHR
Los Angeles Div.
Sales



R. A. RITZMAN
Pacific Coast Area
Production



E. J. STRAWN
E & P Tech. Serv.
Houston

K. R. WITTEN
San Francisco Div.
Operations

Thirty Years

Y. P. BRAUD
Norco Refy.
Engineering

J. O. CLARK
Wood River Refy.
Compounding

W. H. COLLMAN
Wood River Refy.
Lubricating Oils

J. R. DAVIDSON
Wood River Refy.
Utilities

R. C. DAVIS
Wood River Refy.
Aromatics

T. R. EVANS
Shell Pipe Line Corp.
Mid-Continent Area

H. C. GRAMMER
Wood River Refy.
Treating

C. W. GROOS
St. Louis Div.
Operations

L. M. HOLDER
New Orleans Area
Production

W. IVERSON
Seattle Div.
Operations

F. JANSEN
Los Angeles Div.
Operations

R. B. KERR
Head Office
Financial

K. O. LINHOFF
St. Louis Div.
Marketing Service

V. J. MAREING
Wood River Refy.
Compounding

D. A. McDOWELL
Seattle Div.
Operations

Thirty Years continued

D. L. MEANS
Pipe Line Dept.
Bourbonnais, Ill.

A. J. MORESCO
San Francisco Div.
Operations

N. R. OUBRE
Norco Refy.
Catalytic Cracking

E. D. PARKER
Wood River Refy.
Compounding

A. W. PATTILLO
Shell Pipe Line Corp.
Texas-Gulf Area

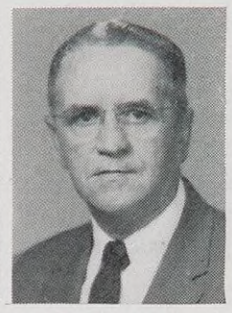
I. L. PRICE
Houston Area
Production

C. O. SANDBACH
Wood River Refy.
Engineering

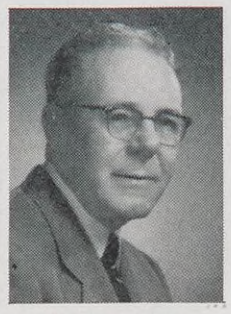
H. V. SAX
Martinez Refy.
Engineering

RANETTA B. SILER
Tulsa Area
Land

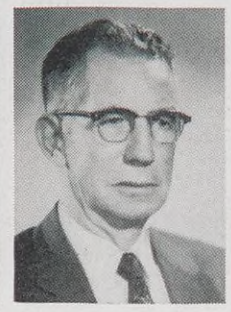
H. A. SMITH
Wood River Refy.
Lubricating Oils



W. H. SMITH
Shell Pipe Line Corp.
Texas-Gulf Area



M. C. SPITZE
Wood River Refy.
Dispatching



C. N. TODD
Pacific Coast Area
Production

T. P. WAIT
Shell Pipe Line Corp.
Head Office

I. N. WATKINS
Norco Refy.
Utilities

T. F. YOUNG
Los Angeles Div.
Operations

Twenty-Five Years

J. W. ANSCHUTZ
Wood River Refy.
Compounding

J. L. BUFFINGTON
Shell Pipe Line Corp.
Mid-Continent Area

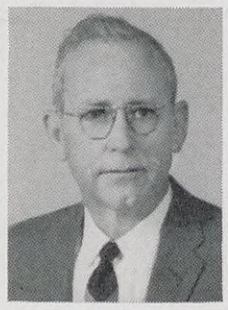
F. C. CARTER
Head Office
Personnel

H. A. EDWARDS
New Orleans Div.
Sales

J. J. FRATICK
Wood River Refy.
Engineering

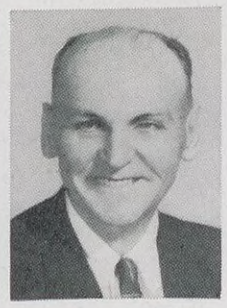
DOROTHY FREDERICK
Midland Area
Exploration

C. GADDIS
Shell Chemical Corp.
Houston Plant



B. S. GRAVES
Norco Refy.
Effl. Cont. & F. & S.

E. R. HUMPHREYS
St. Louis Division
Sales



E. R. KAHL
Wood River Refy.
Engineering

P. H. KIM
Honolulu Division
Marketing Service

K. D. MATTHEWS
Wood River Refy.
Engineering

E. D. McCALLISTER
Wood River Refy.
Engineering

C. A. PATCH
Shell Chemical Corp.
Head Office

G. L POPE
Pacific Coast Area
Production

E. S. QUILLEN
Anacortes Refy.
Fire & Safety

E. C. SHAW
Norco Refy.
Technological

F. E. SMITH
Shell Chemical Corp.
Martinez Plant

G. L. STETSON
Wood River Refy.
Products Application

J. R. WILLETT
Houston Office
Transp. & Supp.


AX
Refy.
ing


UNG
s Div.
ons


TICK
Refy.
ing


THEWS
Refy.
ing


LETT
Office
Supp.

SHELL OIL COMPANY

Head Office

20 Years

J. R. Hinton, Jr. . . . . Marketing
Helen M. Smithwick . . . . . Personnel
E. W. Taylor . . . . . Financial

15 Years

E. A. Elmquist . . . . . Manufacturing

10 Years

Nancy M. De Barbieri . . . . . Legal
H. J. Murdoch . . . . . Purchasing-Stores

San Francisco Office

20 Years

E. A. Breen . . . . . Purchasing-Stores

Exploration and Production

HOUSTON AREA

20 Years

J. C. Neal . . . . . Production

15 Years

J. Hall . . . . . Transport

10 Years

D. D. Bannink . . . . . Exploration
P. H. Bursk . . . . . Exploration
E. M. Hurlbut, Jr. . . . . Exploration
J. W. Ingram . . . . . Production
A. J. Kasparek . . . . . Gas
V. L. Struve . . . . . Gas
R. L. Walker . . . . . Production

MIDLAND AREA

15 Years

O. B. Abbott . . . . . Production

10 Years

L. K. Braswell . . . . . Production
W. T. Crawford . . . . . Gas
R. D. Darr . . . . . Treasury
B. C. Henderson, Jr. . . . . Production
H. O. Hughes . . . . . Gas
L. D. Kauk . . . . . Gas
J. V. Reed . . . . . Gas
R. L. Thomas . . . . . Treasury

NEW ORLEANS AREA

20 Years

G. J. Bourgeois . . . . . Transport & Materials
G. L. Culpepper . . . . . Production
A. J. Dupree . . . . . Production

15 Years

J. B. Johnson . . . . . Transport & Materials
N. J. Verret . . . . . Production

10 Years

W. E. Dabon . . . . . Transport & Materials
V. M. Guest . . . . . Transport & Materials
L. L. Jordan . . . . . Gas
C. W. Lofton . . . . . Production
E. J. Melancon . . . . . Production
E. M. Sanders . . . . . Exploration
L. B. Stumpf . . . . . Exploration
B. W. Swartzfager . . . . . Transport & Materials

PACIFIC COAST AREA

20 Years

W. E. McKitrick . . . . . Exploration

15 Years

J. F. Dixon . . . . . Production
J. E. Pounds . . . . . Production
H. G. Speer . . . . . Production
R. A. Standifer . . . . . Production
W. D. Watson . . . . . Production

10 Years

P. H. Anglin . . . . . Production
E. J. Davis, Jr. . . . . Administration
S. Dykstra . . . . . Production
A. W. Harris . . . . . Production
J. Q. Huckins . . . . . Gas
D. W. Reed . . . . . Production
Patricia M. Reed . . . . . Treasury

TULSA AREA

20 Years

H. I. Hicks . . . . . Production
J. E. Shelton . . . . . Production

15 Years

O. C. Nash . . . . . Gas
W. M. Stafford . . . . . Production

10 Years

R. Naglee . . . . . Production

Manufacturing

ANACORTES REFINERY

10 Years

R. C. Flickinger . . . . . Refinery Laboratory

HOUSTON REFINERY

20 Years

W. D. Antone . . . . . Dispatching
H. C. Nannen . . . . . Stores
T. J. Reed . . . . . Engineering
S. M. Walker . . . . . Engineering

15 Years

J. Dawson . . . . . Utilities
W. D. Dick . . . . . Aromatics
V. T. Gibson . . . . . Engineering
M. E. Gremillion . . . . . Stores
J. R. Jeter . . . . . Lubricating Oils
E. M. Lawrence . . . . . Refinery Laboratory
R. E. McAnally . . . . . Utilities
J. N. McKinney . . . . . Engineering
W. B. Musgrove . . . . . Aromatics
W. L. Nutt . . . . . Catalytic Cracking
W. B. Parker . . . . . Engineering
C. J. Pridgen, Jr. . . . . Engineering
A. G. Rains . . . . . Engineering
E. Reese . . . . . Engineering
B. A. Shallcross . . . . . Treasury
B. N. Stubbs . . . . . Engineering
T. R. White . . . . . Technological

10 Years

A. B. Chaffin . . . . . Dispatching
R. G. Hill . . . . . Pers. & Indus. Rel.
C. E. Salter, Jr. . . . . Gas
L. C. Tuggle . . . . . Engineering

MARTINEZ REFINERY

20 Years

B. Woodson . . . . . Stores

10 Years

G. E. Ruffin.....Pers. & Indus. Rel.

NORCO REFINERY

15 Years

C. Ferraro .....Engineering

10 Years

A. J. Montz.....Utilities
W. B. Powe.....Utilities

WILMINGTON REFINERY

15 Years

F. L. Ayers.....Engineering
G. M. Donnelly.....Treasury
G. T. Fitzgerald.....Dispatching
L. E. Norbury.....Thermal Cracking

10 Years

R. H. Cassel.....Engineering
H. E. Kiper.....Dispatching
L. A. McMillian.....Engineering
W. T. Meskell.....Alkylation
L. P. Zalman.....Engineering

WOOD RIVER REFINERY

20 Years

B. K. Branson.....Engineering
L. C. Scroggins.....Engineering
H. E. Smith.....Engineering
C. L. Sturgeon.....Engineering
G. E. Townzen.....Engineering
O. White .....Compounding

15 Years

L. H. DeWall.....Engineering
P. J. Leininger.....Aromatics
W. J. Mejaski.....Research Laboratory

10 Years

T. C. Anton.....Engineering
L. T. Bailey.....Engineering
T. A. Deatherage.....Engineering
L. C. Hanson.....Engineering
C. B. Revenburgh.....Utilities
W. E. Weiss.....Fire & Safety

Marketing

MARKETING DIVISIONS

20 Years

T. J. Manley.....Albany, Operations
R. F. Peck.....Albany, Sales
D. M. Morgan.....Baltimore, Treasury
H. H. Dinkins.....Detroit, Operations
E. C. McCaig.....Indianapolis, Sales
R. F. Cobb.....Los Angeles, Sales
E. L. Klinge.....Minneapolis, Operations
B. Doyle.....San Francisco, Sales

15 Years

P. Robinson.....Albany, Operations
H. Glaude.....Boston, Operations
R. M. Conley.....Chicago, Operations
M. E. Jeffries.....Chicago, Operations
D. Thompson.....Detroit, Operations
Josephine Moceri.....Detroit, Treasury
K. Nakayama.....Honolulu, Operations
W. E. Mason.....Portland, Operations
R. L. Justice.....Portland, Operations

10 Years

V. A. Best.....Albany, Operations
G. B. Potter.....Atlanta, Sales
J. H. Craig.....Baltimore, Operations
Mona C. Kennedy.....Boston, Sales
A. Brantley.....Detroit, Operations
W. C. Kerney.....Indianapolis, Sales
W. A. Kiriluk.....Minneapolis, Sales
A. Todd.....Portland, Treasury
A. M. Pokorney.....Portland, Treasury
H. C. Dadisman.....Sacramento, Operations
M. E. Moran.....St. Louis, Treasury
O. R. Wussler.....St. Louis, Treasury
P. R. Gallagher.....San Francisco, Sales

SEWAREN PLANT

10 Years

L. H. Danyow.....Engrg. & Maint.
Jane P. Gustenhoven.....Treasury

Pipe Line Department

15 Years

J. J. Umlauff.....East Chicago, Ind.

10 Years

J. C. Ernst.....East Chicago, Ind.

SHELL CHEMICAL CORPORATION

20 Years

M. D. Anderson.....Head Office
J. W. Hyde.....Houston
M. Peccianti.....Martinez
R. C. Siem.....Shell Point

15 Years

W. J. Raab.....Chem. Sales Div.
R. Dagley, Jr.....Head Office
J. E. Stevens.....Head Office
W. C. Walker.....Head Office
M. D. Ayers.....Houston
H. D. Hicks.....Houston
R. L. Maycock.....Houston
B. F. Sanders.....Houston
M. G. Folsom.....San Francisco
E. R. Hankins.....Torrance

10 Years

G. E. Merritt.....Chem. Sales Div.
J. E. Conant.....Head Office
B. B. Beran.....Houston
L. D. Biggs.....Houston
R. H. Blackwell.....Houston
T. M. Denman.....Houston
E. G. Kingdon.....Houston
O. P. Korge.....Houston
E. P. Manley.....Houston
W. H. Norman.....Houston
J. E. Salyer.....Houston
J. T. Stulting.....Houston

SHELL DEVELOPMENT COMPANY

20 Years

G. C. Rounds.....Emeryville
L. F. Seaback.....Emeryville
T. A. Wilson.....Emeryville
R. J. Haase.....Houston
P. Hazebroek.....Houston

15 Years

W. G. Schlaffer.....Emeryville

10 Years

M. R. Shuyler.....Emeryville
M. A. Ericksen.....Emeryville
C. Baltrip .....Houston
F. M. Boatman.....Houston

SHELL PIPE LINE CORPORATION

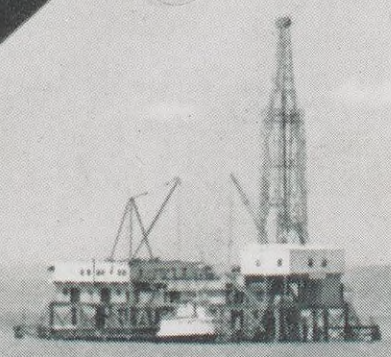
15 Years

A. S. Deaton.....Texas-Gulf Area
H. P. Young.....Texas-Gulf Area
H. F. Copeland.....West Texas Area
J. F. Everett.....West Texas Area

10 Years

P. T. Coons.....Head Office
C. A. McRee, Jr.....Head Office
H. Mosbroker .....Texas-Gulf

Challenge in the GULF



Exploring beneath the ocean floor remains one of the oil industry's biggest challenges. The latest figures available show that more than $2 billion was spent up to January 1, 1957, on oil and gas development in the offshore waters of the United States. At that time, these operations had earned back only an estimated $372 million. On the credit side, however, offshore operations have added 800 million barrels of oil to the nation's proved reserves.

(The rig is the "John Hayward"—formerly under contract to Shell —seen through the understructure of a Shell production platform in the New Orleans Exploration and Production Area.)

matters of *fact*

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4710 Bell
Houston 23, Texas

SPL

ATOMIC POWER GREASE

Atomic power plants require lubricants which will withstand the damaging effects of radiation. Ordinary grease, when exposed to neutrons and gamma rays, becomes brittle or excessively soft. Through Shell Oil Company's research, this problem has been solved with a new lubricant, Atomic Power Lubricating Grease (APL).

Shell's new product, the result of 30 months of research, required unusual teamwork among Shell Oil's Research, Sales and Products Application Departments, and Shell Development Company. The new grease was tested for radiation resistance at the Emeryville Research Center and the Atomic Energy Commission's Materials Testing Reactor, Idaho Falls, Idaho. APL is designed especially for lubricating pumps and machinery subject to radiation in atomic power plants.

Shell's new grease—inside a roll tester—is exposed to radiation at the AEC's Materials Testing Reactor. The grease is worked around inside the steel roll tester while under bombardment at the bottom of a water-filled pool. The glow is caused by the absorption of gamma rays in the water.