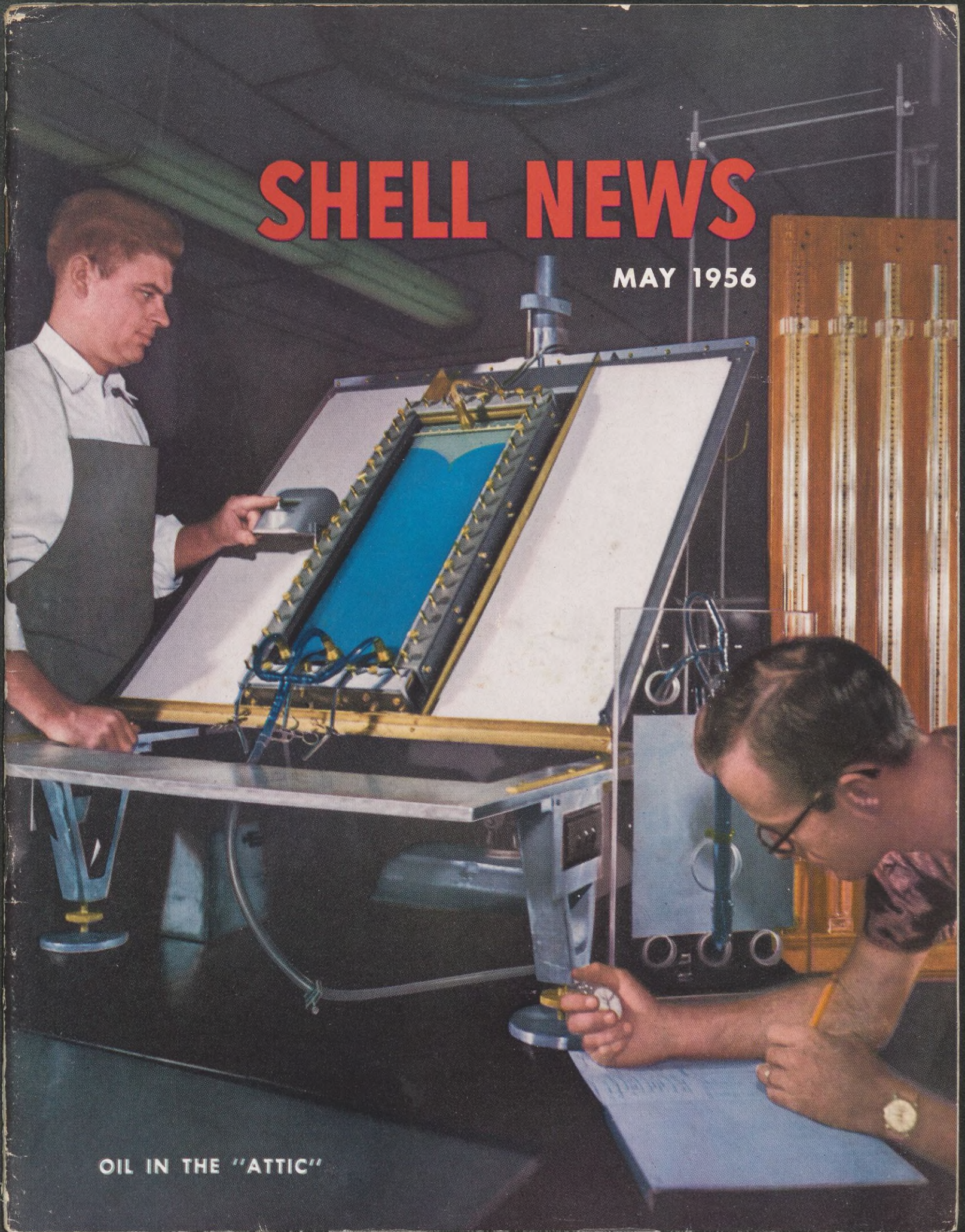
SHELL NEWS

MAY 1956

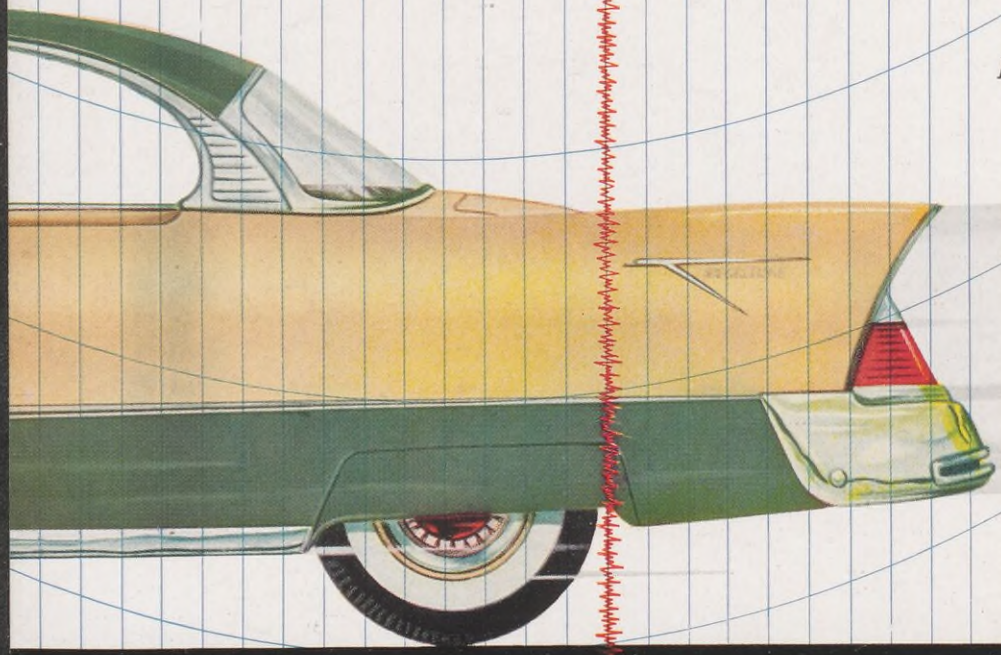


OIL IN THE "ATTIC"

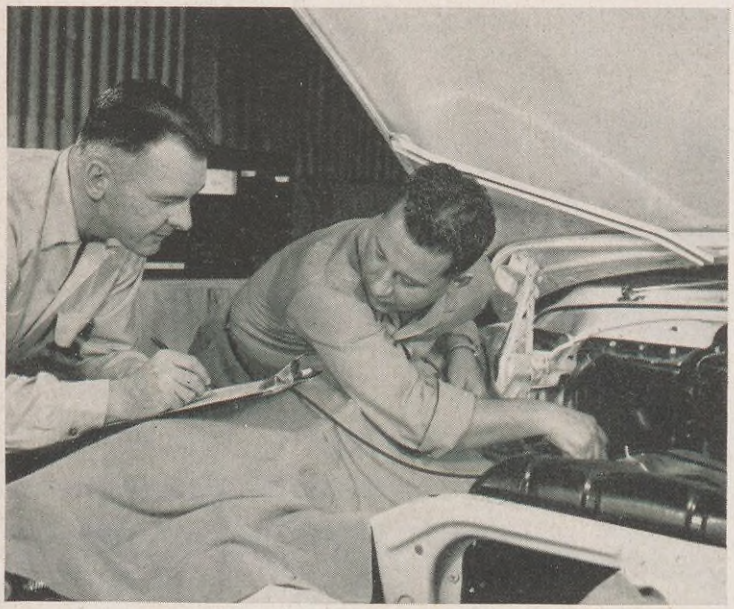
A test car zooms down the road at San Antonio, Texas, during one of the tests of gasolines in 1956 automobiles. The radar instruments chart the car's speed and give its acceleration time.

PAVEMENT

Rigorous Road Tests Prove Shell Gasoline



SHELL
PREMIUM
GASOLINE
with TCP



D. L. Berry, left, Products Application Department Engineer, and C. A. Phalen, Research Engineer from the Wood River Research Laboratory, check spark plug resistance in one of the test car motors.

PROVING GROUNDS

Stands Out in the Premium Power Field and Give a Preview of Fuels of the Future

SHELL engineers are winding up six months of research on wheels to answer three crucial questions in the oil industry's hottest competitive race: (1) How does Shell Premium Gasoline with TCP* compare with competitive fuels? (2) How well does Shell Premium meet new car needs? (3) How do Shell fuels of the future perform on the road?

The answers are coming from gasoline's toughest critics—20 new 1956 automobiles. Test tubes and tachometers tell only part of the full story of how gasolines will perform in each year's new car models, and while long hours in the laboratory go into bringing fuels to the test stage, only research on wheels can give complete performance details. So Shell engineers rolled out the four-wheeled fact finders for field tests at the proving grounds at the Southwest Research Institute, San Antonio, Texas.

The complete test results aren't known yet because some data still are being analyzed. But one of the major—and not unexpected—results was proof that Shell Premium Gasoline with TCP stood out over competitive brands tested in maintaining maximum engine power.

The Texas tests were divided into three phases. The first matched two top competitive premium gasolines against Shell's. The second pitted gasolines from all Shell refineries against 45 competitive brands in test cars which had been driven several thousand miles. The third phase concentrated on the performances of a quartet of Shell's potential fuels of the future.

The variety of makes of cars in the test also reflected Shell's aim for

* Trademark Shell Oil Company

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Employee Communications Department
New York, N. Y.

contents

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OIL IN THE "ATTIC"

"Attic Oil" is a term which refers to crude oil in the upper portion of a tilted producing formation. How to recover such oil when a well has tapped the formation farther down is the subject of an investigation shown in progress on this month's front cover. L. W. Pickle, left, and R. N. Hale, Laboratory Assistants at Shell Development Company's Exploration and Production Research Laboratory in Houston, work with a model that simulates the tilted angle of a producing formation under study.

Pavement Proving Grounds

continued

Phalen, left, and J. E. Cox, Products Application Department Engineer, blend a reference fuel of known octane number to be used to check the knock rating of the 1956 model automotive engines in the test. Each motor has a different rating.

George Seipp, left, of the Southwest Research Institute and B. W. De Long, Products Application Department Engineer, observe test car fueling.

diversified and thorough testing. All were purchased from dealers in San Antonio and included Cadillac, Mercury, Chevrolet, Chrysler, Packard, Plymouth, Oldsmobile and Buick cars. All had V-8 engines, and compression ratios ranged from 8-to-1 to 10-to-1. (Compression ratios in automotive engines have risen sharply in recent years. As they rise, so does the tendency toward knocking, pre-ignition and spark plug fouling. This means gasolines must be tailored and retailored to meet rising requirements and give top performance.)

In the first test phase—matching Shell Premium against competitive premium gasolines—one of the competitive fuels contained a special combustion control additive. The other did not.

With Shell Premium and the competing fuels in their respective tanks, the test cars moved in convoys through San Antonio streets to pace the trials at the stop-and-go rate of normal driving. Impartial professional drivers were at the wheels. This test had two objectives. Firstly, to learn how far the cars could be driven without encountering power loss and rough running due to spark plug fouling and misfiring. It was found that the cars operated on competitive gasolines "fouled out" in 1,600 to 4,900 miles. The cars operated on Shell Premium Gasoline traveled over 7,500 miles before any fouling could be detected.

The second objective of the test was to take the cars which had become fouled with competitive fuels and learn how well they would respond to a "chemical tune up" afforded by operating them on Shell Premium Gasoline with TCP. It was found that the time required for TCP to restore fouling power loss varied with the makes of cars and the degree to which each had been fouled by competitive fuels. However, after using only a few tankfuls of Shell Premium, spark plug performance was restored and power recovery in general was from 6 to 18 per cent.

To determine the degree of power loss caused by competitive fuels and later the restoration of power by TCP, Shell's engineers clocked the cars in acceleration tests, using both radar and stopwatches, and under proper police protection to insure safe operations. Each car was spurted from 30 to 70 miles per hour. The time required to reach 70 miles per hour increased with loss of power, and decreased as TCP took effect.

With the first test phase ended and all cars containing some deposits in their combustion chambers, the second series of road tests began. Samples of 45 competitive gasolines, both regular and premium grades, from all over the nation were used. In addition, Shell Premium and Regular Gasoline samples from each of Shell's six refineries were used to determine whether the quality of all was uniformly satisfactory and to compare them with the other brands.

With the samples of gasoline on hand, Shell's engineers set out to learn the knocking characteristics of the 1956 automotive engines using both premium and regular grades, and to see how the engines responded to the different brands of fuels. The test results gave conclusive evidence

One of the new cars used in the fuel tests nears the end of its 8,000-mile total run on a road outside San Antonio. Cars fueled with competitive gasolines lost power. But Shell Premium Gasoline with TCP restored the lost power by modifying spark plug deposits.

that Shell is maintaining its position as a leader in manufacturing superior automotive gasolines.

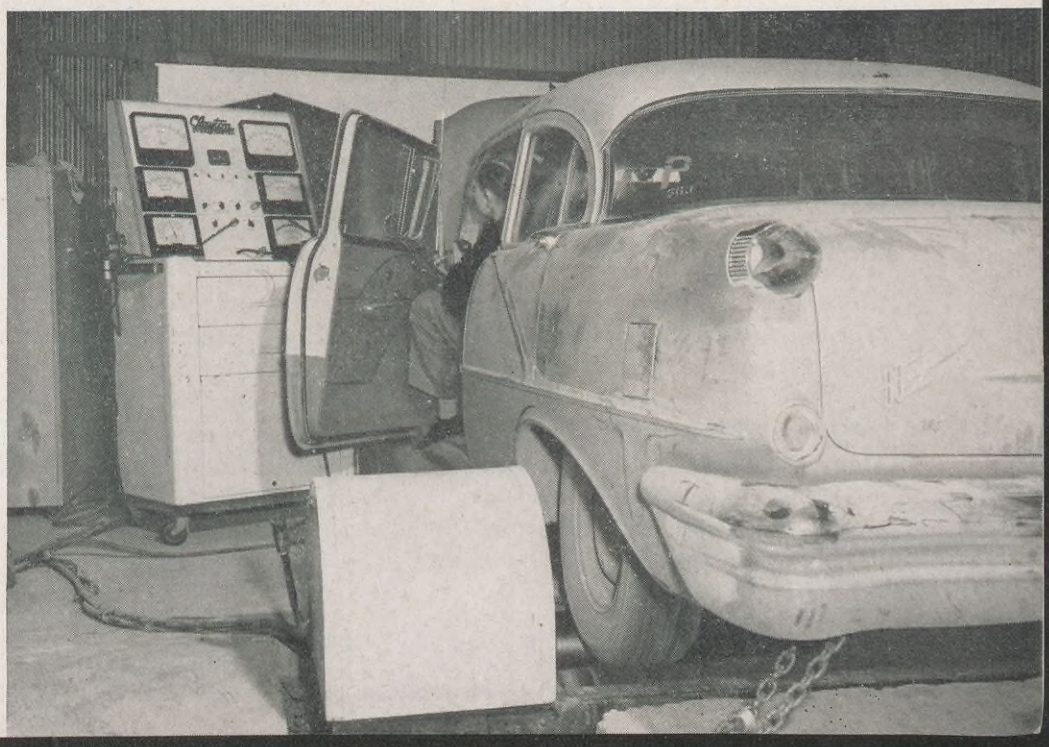
The final phase of the Texas testing was shrouded in secrecy as four of Shell's experimental fuels of the future were tried for the first time under actual road conditions. Their formulas had been determined in conferences among Shell men involved in research, testing and manufacturing. Each contained new ingredients developed through Shell research.

The experimental gasolines were tested in Buicks, Chryslers, Oldsmobiles and Mercurys. Each car was driven 12,000 miles through San Antonio traffic and on the highways —again to get data based on actual driving conditions — while engineers checked on miles-per-gallon, engine knock characteristics and other factors.

The driving, however, was only half the experiment. After thousands of miles on the road, all of the engines are now being taken apart and are undergoing detailed examination for internal effects—a task that won't be completed until late in May. They should play a vital role in Shell's progress toward high octane fuels of the future.

Phalen, wearing light suit coat, Berry, and Cox supervise Southwest Research Institute mechanics who adjusted the fleet of test cars each morning to make certain they were in perfect condition for the road tests. After the tests the motors were torn down and studied.

Cox sits in one of the test cars while checking the automobile's performance on a dynamometer. The rear wheels turn a shaft which registers the car's speed and engine load. The initial "P" on the rear window indicates the vehicle used "P" brand fuel during test.



Winter Weather Warm-Ups

B. W. De Long, left, and C. E. Arbuthnot, both Products Application Department Engineers, pour a special Shell test fuel mixture into the tank of a test car at Plattsburg, New York.

A test car returns from its cold weather warm-up run to compare the performance of special blends of two Shell gasolines in some 1956 model automotive engines.

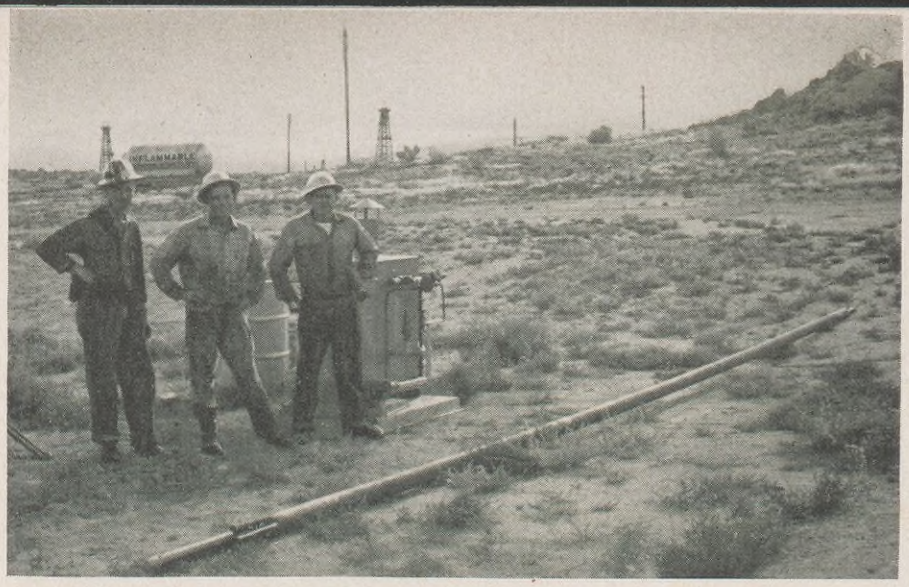
Ed Dunning, left, Assistant Manager of the Products Application Department, De Long, Arbuthnot and Special Engineer C. R. Johnson, right, analyze data from the tests.

WHILE the tests in southern Texas were going on, Shell engineers completed tests of winter gasolines in the cold north. At Plattsburg, New York, near the Canadian border, where temperatures ranged from 4 degrees below to 40 above, testers tried out special Shell fuel mixtures for winter driving performance in five makes of cars.

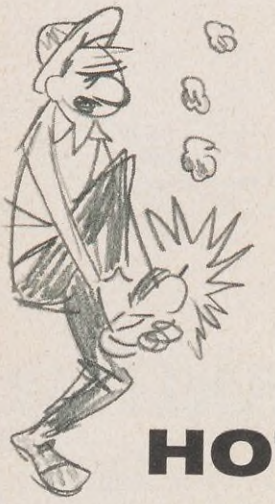
Engineers noted how long each car took to start on cold mornings using each type of fuel, and charted ability to accelerate from 20 to 40 miles per hour while the motor was still cold.

These cold-weather tests are part of a continuous program to assure that Shell gasolines give good starting and quick warm-up in each year's new cars. Also, new engine needs are fitted into Shell's manufacturing and development schedule to keep Shell gasolines tailored to meet those changing requirements.

These road tests are joint efforts involving the Shell Oil Company Manufacturing Organization's Products Application Department, which outlines the requirements needed in the fuels; the Manufacturing Operations and Technological Departments which say what would be needed to manufacture those fuels, and research scientists of Shell Development Company and of Shell Oil Company, who conduct research programs aimed at the development and manufacture of superior products. The team effort adds up to better products, increased demand and rising production.



In the Midway-Sunset Field of California, a long, slender oil-circulating heater is prepared for lowering into a low-production Shell well. Heat will make the crude oil flow easier and in greater quantity. Left to right, are: Well Pullers A. L. Archer, C. E. Draper and J. W. Reid.



HOTFOOT FOR TIRED WELLS

California Field Tests by Shell Engineers Show Underground Heat Waves Invigorate Aging and Reluctant Wells to New Production Peaks

THE heat is on some California strippers, and they're being forced to pay out about $19,000 each.

That may sound like a tabloid's treatment of a burlesque blackmail story, but it really tells the profitable result of three years of field testing study by Shell engineers. The problem was how to increase production in wells where the crude oil is so heavy and sticky that only a small part of it can be pumped to the surface by conventional methods. Such small-producing wells, though widely and loosely referred to as "strippers" in the oil industry, are classified as "marginal producers" in the Pacific Coast Exploration and Production Area. But now, after the study and succeeding experiments, many of those wells have been boosted out of the marginal class.

Shell's engineers found that heating the reluctant wells at their bottoms warms them up to a new productive life.

Most oil wells produce high gravity crude oil which flows or is easily pumped from the ground. But some wells—such as those in California's Midway-Sunset Field – produce low gravity crude oil which resists pumping because it is so viscous. Many of these wells barely produce enough oil to be profitable.

Since oil flows more easily when it is hot, the engineers started testing ways of evicting the heavy crude oil by warming it in the ground. They tried three different types of subterranean "radiators"—electric, steam and oil-circulating—and found all three produced dramatic payoffs.

The production of one of the wells under test increased from two to 16 barrels per day, another from eight to 24 barrels, and a third from 15 to 51 barrels per day. Overall, production helped by heat rose anywhere from 340 to 800 per cent in the first test wells.

The oil-circulating system seemed to give the best results because it gave almost no operating trouble and cost less to operate. The oil in the system was heated above ground to about 290 degrees (78 degrees higher than water's boiling point) and pumped down the well to a long tube-shaped heat exchanger. From there, radiant heat penetrated the oil producing formation and warmed the crude oil.

The engineers estimate the bottom-hole heaters may mean an additional income of about $19,000 per well. Each well's increased oil production pays for its heating unit in about a year, and apparently the heat treatment increases the amount of oil that can be pumped out. The hot production pays extra dividends, too, in more pump efficiency and lower flow line pressures.

Now that engineering field tests have proved that the oil well heaters pay off in both cash and conservation, approximately 25 have been installed in Shell's low-gravity producers in Kern County, California. Twelve more are being put in to revitalize other old wells.

Exploration and Production research buildings in Houston are landscaped to harmonize with the surrounding residential neighborhood.

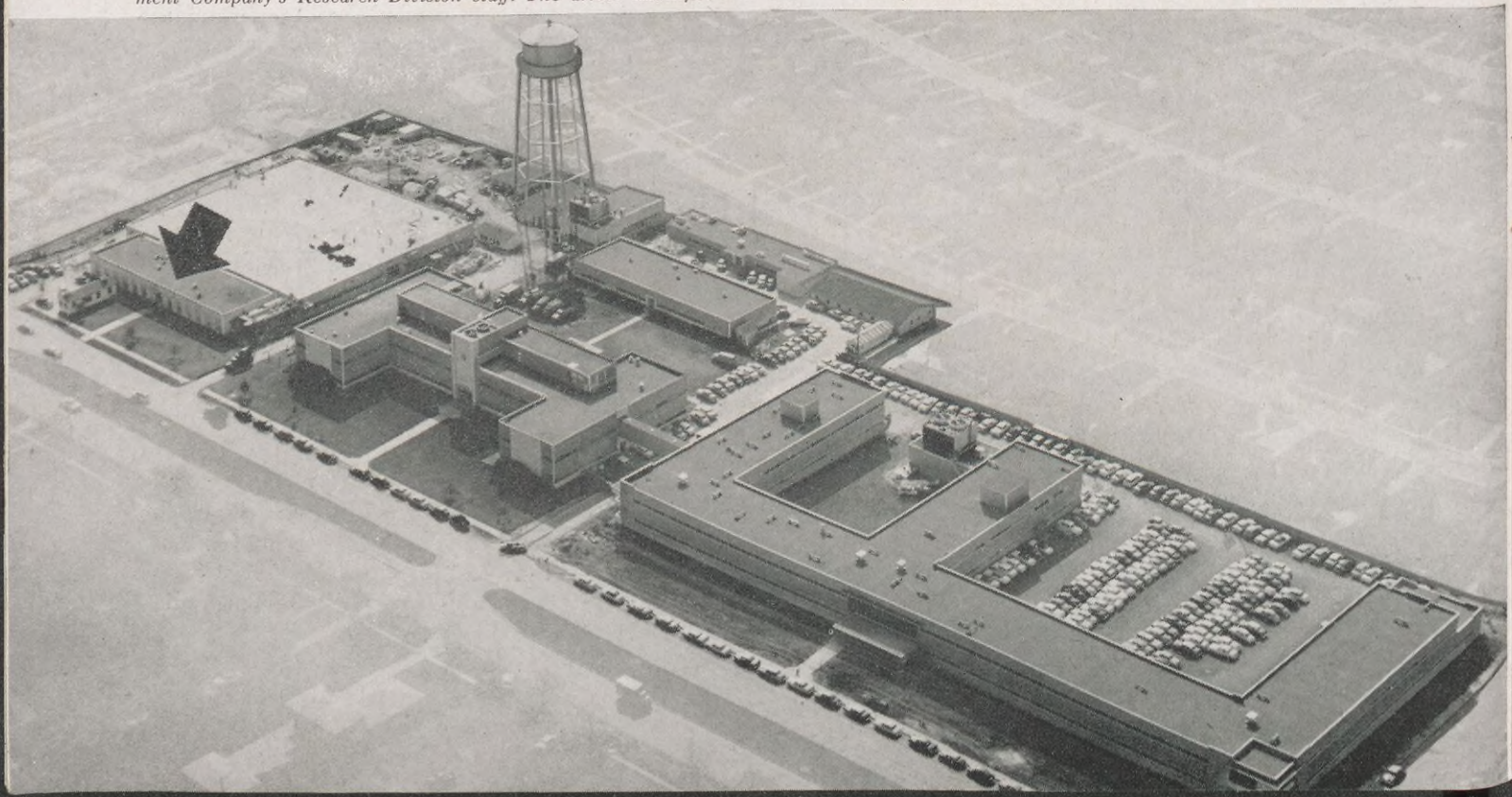
Progress

New Laboratary and Research Division Symbolize

SINCE June 1, 1945, a group of Shell employees in Houston, Texas, has been working to find better ways of locating oil and to improve methods of bringing it to the surface.

Major advances in exploration and production techniques made by this research team—the Exploration and Production Research Division of Shell Development Company – have been beneficial not only to Shell, but to the petroleum industry as a whole. This progress in research is exemplified by a steady increase in the Division's personnel and laboratory facilities

In this group of buildings—all concerned with exploration and production research and services—the E-shaped building at lower right was completed this year and is occupied both by the Technical Services Divisions of Shell Oil Company and members of Shell Development Company's Research Division staff. The arrow identifies the small laboratory in which the Research Division started 11 years ago.



Laboratory Technician A. E. Wease tests portable rock coring equipment developed for field use in obtaining rock samples for laboratory studies.

in Research

Office Buildings at Shell Development's Exploration and Production the Achievements and Broadening Scope of Petroleum Research

during its first 11 years of operation.

The Division started with 60 employees in a small laboratory on Houston's Bellaire Boulevard. Two and a half years later, a large combination laboratory-office building was completed and the smaller laboratory was converted to a shop building, where various research and testing instruments developed by the researchers are constructed.

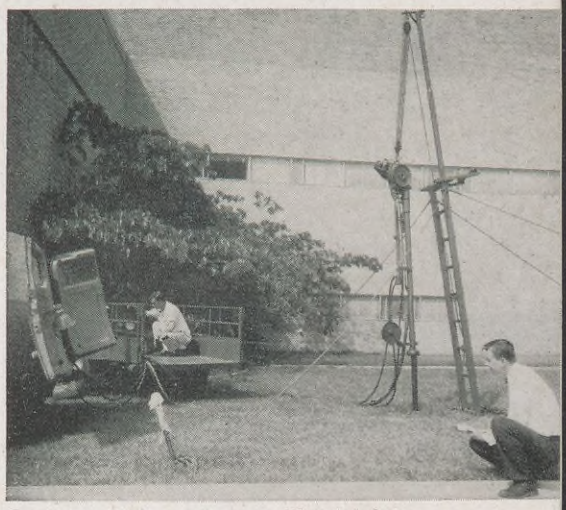
Expanding its research activities, the Division added a laboratory to house high pressure equipment in 1952 and in 1955 opened a radiation laboratory—where, with the use of an "atom smasher," the nature and history of oil bearing rock formations are studied.

This year, two additional buildings were completed on the site. One is an extension of the shop building, with parking space for 85 automobiles provided on the roof. The other—the largest building of the group—is a 94,000-square-foot laboratory and office building which is occupied by members of the Research Division staff and by the Exploration and Production Technical Services Divisions of Shell Oil Company.

The Technical Services groups maintain liaison between Shell's seven Exploration and Production Areas and the Research Division. The Research Division, in addition to basic studies, directs attention to the solution of specific problems of the Areas in the fields of engineering, physics, chemistry and geology.

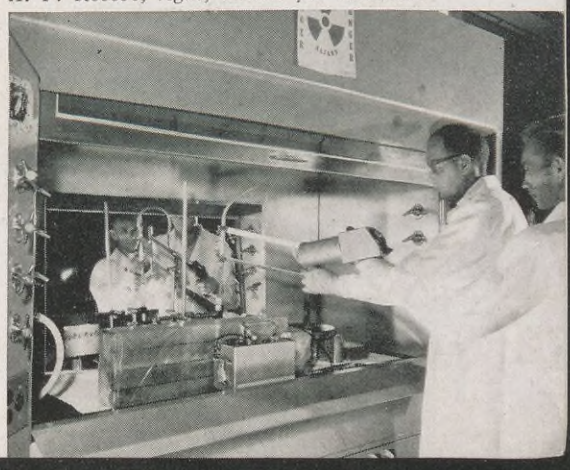
As the Research Division laboratories have expanded in function and size, the number of employees has increased to 360 persons. With the recent increase in laboratory facilities, an accelerated research program is under way.

In both exploration and production operations, an important element is the interpretation of data which may indicate where oil is likely to be found and, once found, to estimate the amount of oil and the rate at which it can be recovered. Thus the results of research are of two kinds. One is the better understanding of the geological and physical processes involved, and the other is the invention and



Testing a high pressure wellhead lubricator in the Research Division's backyard are Engineer D. E. Broussard, right, and Wease.

In the radiation laboratory, N. W. Dickerson, Jr., moves a radioactive solution as A. F. Roscoe, right, checks for radiation.



development of methods and instruments for obtaining pertinent data for use in the interpretative process.

From extensive studies of sediments, of both recent and ancient geological time, an improved understanding has been acquired concerning the relationships between sedimentary rocks of different characters and the environments which prevailed during the periods in which they were deposited. Thus, it is now possible to determine from cuttings and cores taken from a single well the origin of porous sand bodies and to determine their direction of maximum extent. These results permit a more economic development of a discovered oil field and are expected to lead to the more economic discovery of new oil fields.

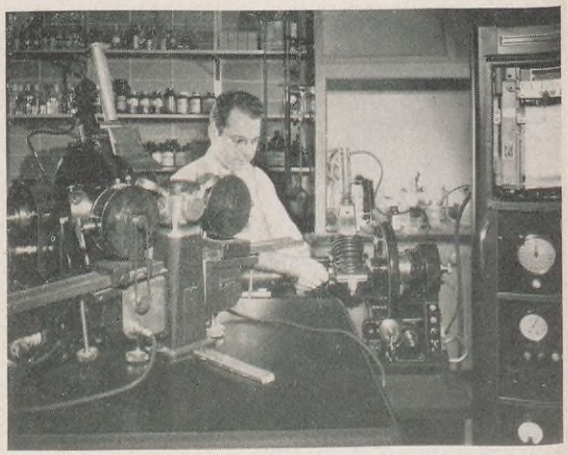
From laboratory and field studies, improved seismic equipment and methods have greatly improved the determination of the geometry of the rock layers from seismic data.

From theoretical and experimental studies of the flow and displacement of fluids in porous rocks, it has been possible to estimate more accurately the amount of oil which can be recovered from various reservoirs by different methods.

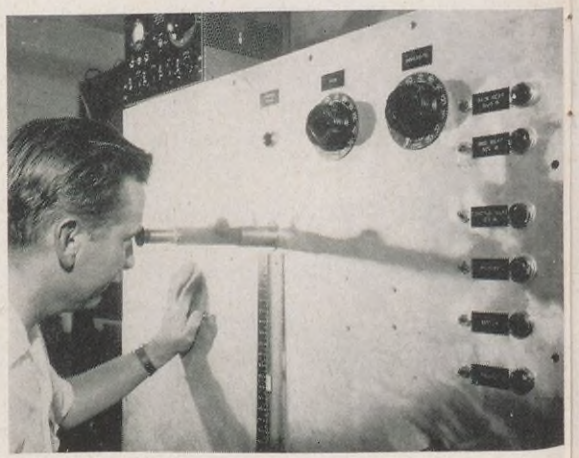
These accomplishments which have been of the greatest value to operations have largely been concerned with an improved understanding which has increased the scope and accuracy of the interpretation of field data. This understanding which leads to tangible improvements in actual operations comes about from an interplay of research and actual operations. The progress in theoretical understanding is closely related to the development of instruments and techniques for acquiring more accurate or new data. Sometimes it is difficult and requires a great deal of ingenuity to develop instruments which can be economically used to acquire needed data.

Here are a few of the many instruments which have been developed by

Unusual instruments such as the one shown here are effective tools in the search for more information about oil. Chemist R. J. Grabowski is "activating" a sample in an emission spectograph, which analyzes petroleum, minerals and other substances.



Sitting behind X-ray equipment is Chemist C. A. Lucchessi, who uses the instruments to study rocks and various petroleum products.



Physicist N. W. Crawford peers into an apparatus where physical changes occurring in mixtures under varying pressure can be seen.

the Research Division for the improvement of exploration and production methods:

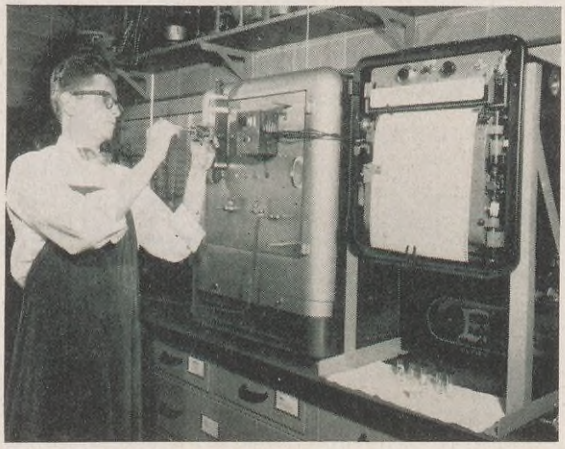
High Pressure Wellhead Lubricator, which makes it possible to lower recording instruments into high pressure wells under pressures of as much as 5,000 pounds per square inch. Shell has made this valuable equipment available to the petroleum industry by licensing it to a service company.

Velocity Well Logging Device, which is used in exploration to measure and record the variations in speeds at which sound travels through different rocks, thus identifying the rocks. It is more accurate and less expensive than conventional seismic techniques which require the use of dynamite explosions. Instead of surface shots, the Shell method employs a "discreet pulse," which is a high-pitched sound transmitted at various levels within a slim hole drilled in the ground. This device is the result of over six years of experimentation.

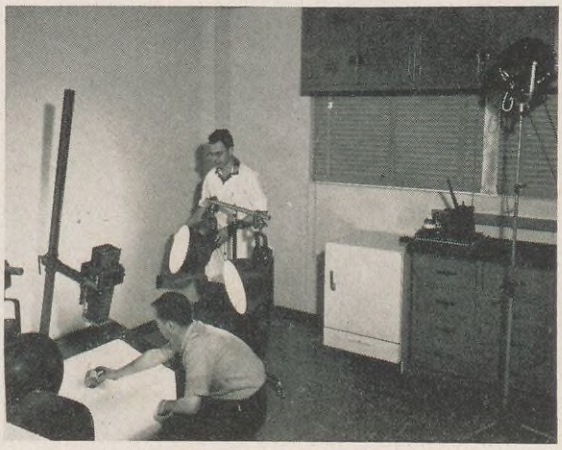
Sample-taking Device. In connection with marine sediment studies, a piston corer was adapted to take undisturbed samples from the sea floor. The steel piston-coring barrel, with a plastic tube mounted inside it and a 300-pound weight attached to its top, is dropped from a boat, plunging the barrel deep into the sea floor and forcing sediments into the plastic tube.

An exploration or production research project is not complete until the results are successfully applied in oil field practice. Hence, among the functions of the Exploration and Production Technical Services Divisions is the promotion of such application and also to act as technical advisors on any given project or problem.

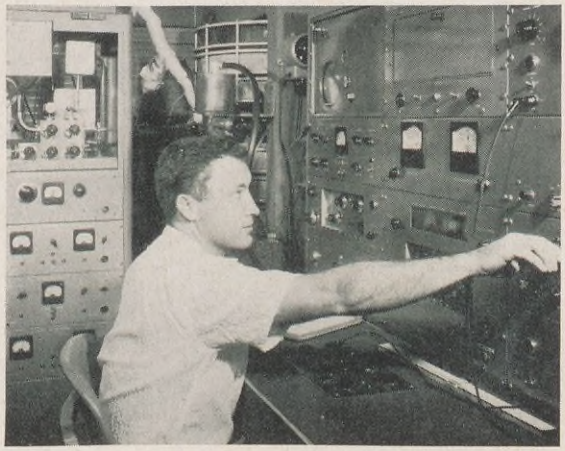
By sharing the same building in the newest addition to Shell's Houston research facilities, both the Exploration and Production Research Division and the Technical Services Divisions benefit by day-to-day contact—expediting the exchange of ideas and promoting even greater progress in research.



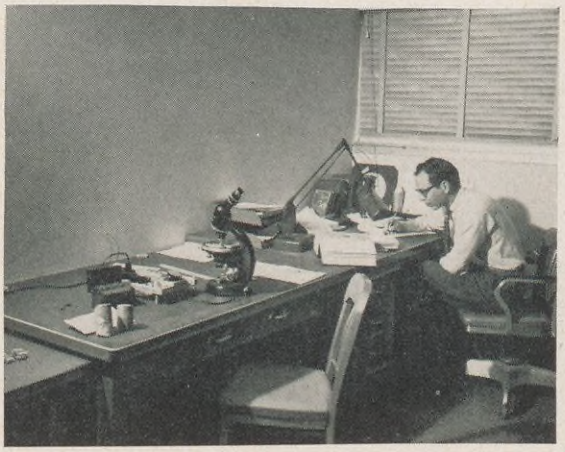
Studying more effective methods of natural gas production, Chemist Gordon Guerrant injects hydrocarbons into apparatus used to analyze gaseous and liquid products.



Photographing a core sample for research purposes are Laboratory Assistants W. O. Howard, kneeling, and C. A. Spencer of the Geological Department photo laboratory.



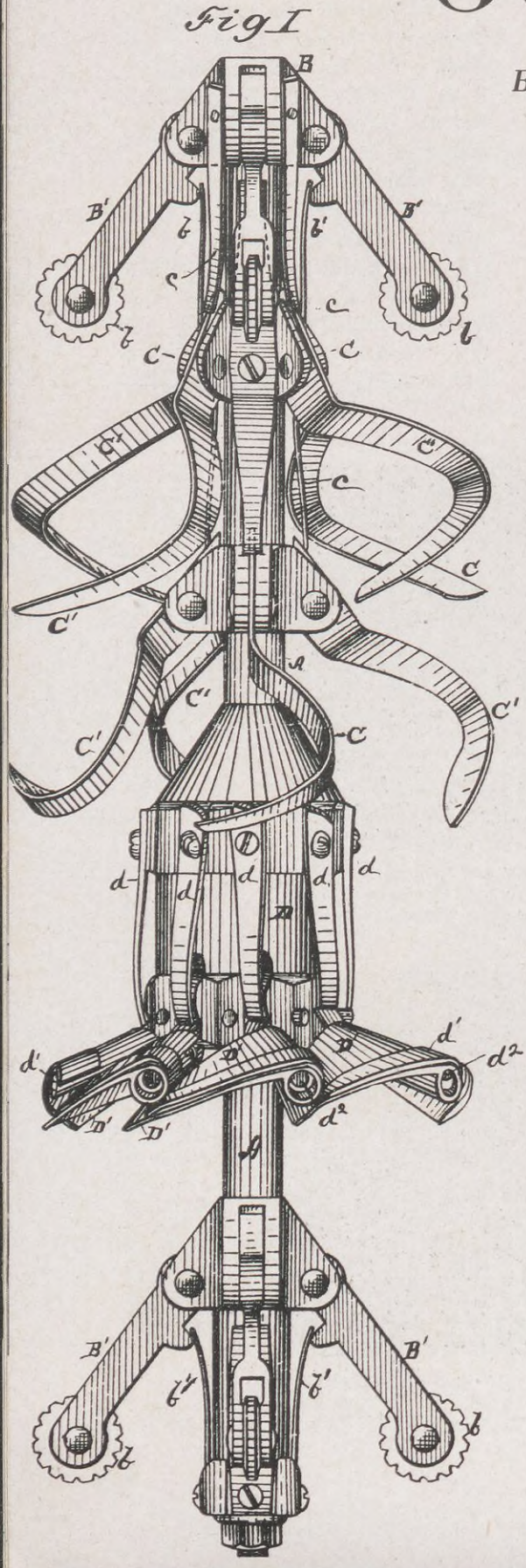
Laboratory Assistant C. E. Douglas operates a mass spectrometer, a complicated instrument used to analyze gases, gasolines and higher-boiling petroleum fractions.

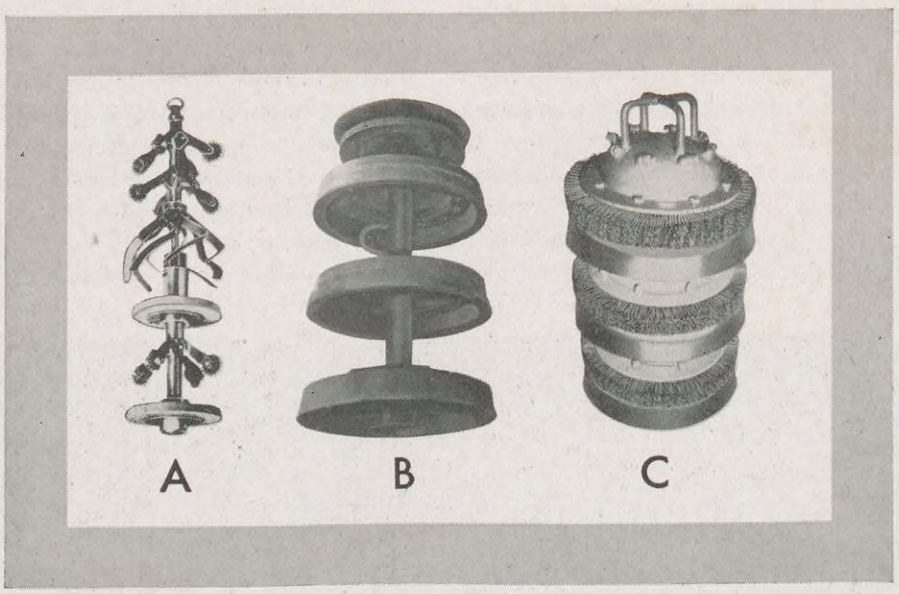


Ideas for solving exploration and production problems are born in quiet offices like this at Houston laboratories. Pictured here is Geologist B. W. Wilson.

Go-Devils

By Whatever Name, These Versatile Traveling Instruments Help Shell Keep Pipe Lines Clean and Products Pure





The large drawing on the left is taken from the original patent issued on December 22, 1885, to John S. Klein for his pipe line cleaner. Above are three different types of modern pipe line cleaners in wide use today: (A) the scraper-type cleaner, which is still much like the Klein invention, (B) the plug-type cleaner and (C) the brush-type cleaner.

ALTHOUGH it works underground and gets its name from a most disreputable character, the go-devil is greatly respected by the oil industry—for it helps keep oil, gas and petroleum products flowing freely and purely through thousands of miles of pipe line throughout the world.

Go-devil is the original nick-name given devices which are forced through pipe lines to keep their interiors clean. Today, with the development of several types of cleaners, each has taken on its own name, such as, "pig," "plug" or "scraper." Even the word go-devil is now used to describe a specific type of pipe line cleaner—one which has changed little from the first patented apparatus.

Most pipe line cleaners fall into three general classifications: SCRAPER-TYPE, BRUSH-TYPE and PLUG-TYPE. The SCRAPER-TYPE cleaner, which actually is called a "go-devil" and also a "scraper" by pipeliners, has a series of spring-mounted knives, leather or rubber discs and guide arms mounted around a jointed steel rod. The discs, which are common to all cleaners, are the size of the inside diameter of the pipe and form a wall against the crude oil or product which pushes the cleaner through the line. The cleaner removes deposits left by products flowing through the line and also pushes out air, vapors and water, thereby reducing internal corrosion and increasing the throughput of the line.

The BRUSH-TYPE cleaner, often called a "pig," is a series of circular heavy fiber or steel brushes and rubber

discs on a flexible steel rod. Its job is the same as that of the scraper-type cleaner. However, it is used in pipe lines which have a minimum amount of corrosion.

The PLUG-TYPE cleaner, called simply a "plug," is made up of a series of rubber discs or cups. When a new pipe line is being completed, it is used to remove loose debris—some of it full of surprises—prior to closing and testing the pipe. In lines where corrosion is slight, plugs also are used to push out water and vapors.

To keep products pure in a pipe line that carries several different petroleum products one behind the other, plug-type cleaners sometimes are used to separate the "batches." As the flow of one product ends, a plug is sent into the line with split-second timing before the new product begins to flow.

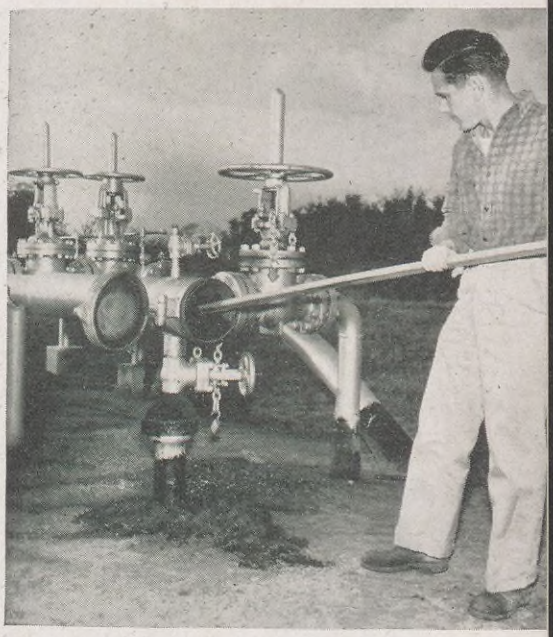
The cleaners are made up in different combinations of parts, according to the need. For example, the scraper-type cleaner can have different combinations of knives, guide arms and discs, which are interchangeable on the central shaft. The makeup of the cleaners is usually determined after trying several combinations in a line.

Shell Pipe Line Corporation uses all three types of cleaners. The type of cleaner used and the intervals between cleanings depend upon: (1) waxing and corrosive characteristics of the crude or product being pumped through a line and (2) how close to the maximum capacity that crude or products are pumped through the line.

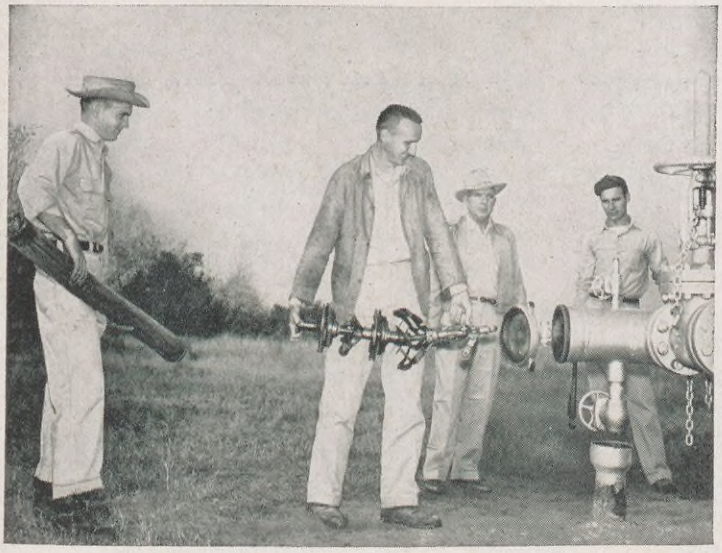
Pump stations along Shell Pipe Line routes are spaced at about 50-mile intervals. Each station has "scraper traps" where each incoming cleaner is removed from the line and a new or reconditioned cleaner is put into the line to continue the cleaning to the next station. On removal from the line each cleaner is inspected, cleaned and, if necessary, repaired.

A cleaner travels through a line about as fast as a man walks. As it moves along, a humming whine—which can be heard above ground—is made by its scraping knives or brushes, the notched wheels on its guide arms, and the rubber discs pressing against the walls of the pipe.

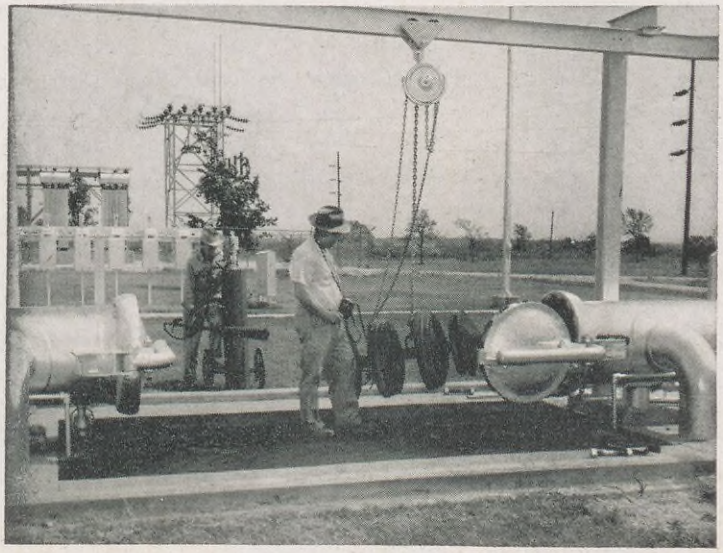
The speed and sound of a moving cleaner are important factors in tracing those cleaners that occasionally get stuck. When one cleaner stalls, another is put into the line and a man follows its hum as it moves along underground. When the sound stops, it is an indication that the stalled cleaner has been reached. The spot is then marked and a crew is called in to cut the pipe and remove both cleaners. In some cases, the moving cleaner will dislodge the stalled cleaner and they travel together to



Black pipe scale which has been pushed out of a line by a go-devil is cleaned from a "scraper trap" by Pipeliner R. G. Rodeman.



Leadman J. H. Starks prepares to insert a scraper-type pipe line cleaner into a products line as Pipeliner J. D. Andersen stands by with a log to push it in. Looking on are Maintenance Foreman C. C. Moss (wearing hat) and Pipeliner J. S. Broomas.



A chain hoist is needed to insert a heavy 24-inch-diameter plug into a pump station scraper trap. Before putting it in, L. L. Arnold, right, an assistant station chief engineer, tests the area with a gas detector as Utilityman R. D. Webb stands by with a fire extinguisher.

Andersen replaces rubber discs on a go-devil at a pump station repair shop. In the foreground are worn rubber discs, used on a cleaner in a pipe line of varying diameters. Designed by Shell engineers, the notched discs contract as a cleaner enters smaller pipe.

the next pump station.

The first pipe line cleaner was used in about 1880 by the Tide Water Company, Ltd., builders of the first oil pipe line from Western Pennsylvania to the Atlantic.

The first section of this company's pipe line was laid during the winter on the surface of the ground. When warm weather came the pipe expanded in length, pushing down trees and telegraph poles. (A competing company had the opposite difficulty—contraction in winter parted its pipe.)

The Tide Water pipe then was placed underground, but the lower temperature of the oil flowing beneath the surface caused a paraffin-like deposit to form on the inner walls of the pipe, decreasing the flow. Chemical solutions failed to dissolve the deposit, and an experimental ball-shaped scraper was worn out by friction after being pumped through the line a very few miles.

Finally, an arrangement of leather and sheet iron washers strung on a bolt was designed and pumped through the line. The wax deposits, as well as debris which had been left in the line during construction, was cleaned out by this apparatus—the first effective pipe line cleaner.

On December 22, 1885, John S. Klein was issued the first patent on a pipe line cleaner such as those known today. Although Klein's cleaner was first marketed as a "pipe line scraper," pipeliners dubbed the instrument "go-devil" because—as the story goes—many farmers, hearing the humming sound of the cleaners as they moved along underground, thought the devil was after them. Not until 1906 did the name go-devil become a formal title of a cleaning apparatus. At that time a Pennsylvania company started manufacturing and marketing a cleaner based on the Klein patent under the title of Go-Devil.

Through the years that followed, many modifications were made in pipe cleaners and new patents were granted. However, the basic design of several cleaners on the market today is that of the Klein invention.

Among the significant modifications which have been made is a cleaner designed to be used in a pipe line of varying diameter. This innovation was developed in 1947 by Shell Pipe Line's engineering personnel.

The engineers used a standard scraper-type cleaner the size of the largest diameter of the pipe. Since both the guide arms and knives of the cleaner are flexible, it was only necessary for them to redesign the rubber discs, making them contractible so the cleaner could enter and travel through pipe of smaller diameter. They did this by notching two rubber discs and placing them together to provide a continuous face against the oil moving the cleaner through the pipe. When the cleaner enters a smaller pipe the outer edges of the discs come together like the fingers of a hand.

The Shell-designed cleaner was first used on a line which has eight-inch cement pipe, six-inch steel pipe and six-inch, cement-lined pipe. It has been used successfully since then in this and other lines of varying diameter in the Shell Pipe Line system.

Pipeliners tell many stories about the odd things cleaners have pushed out of pipe lines. However, the advent of the pipe line inspector on construction projects has cut down the number of objects—animate and inanimate—found in lines in recent years. One of the duties of the inspector is to see that each section of pipe laid is capped at the end of each day, thus barring entry to prowling animals. In addition, each section of pipe is swabbed out before it is welded onto the line.

Despite this careful handling, cleaners sometimes push out strange objects as they travel through a line the first time. Shell pipeliners have reported such objects as rabbits, snakes, rats, fence posts, log chains, skids and railroad jacks. One of the most unforgettable finds was a dozen dead skunks.

"Smelled like the devil," said one crewman. And he didn't mean the go-devil that pushed them out.

Shell People in the News

Shell Chemical Corporation Manufacturing Organization Changes

G. A. GRIMMA

G. A. GRIMMA has been named to the new position of Manager of Employee Development in the Shell Chemical Corporation Manufacturing Department, and will be responsible for the coordination and further development of programs for employee recruiting, evaluation, development and placement. Mr. Grimma, who holds a Bachelor's degree in organic chemistry from the University of Illinois, joined Shell Chemical Corporation in 1943 as a Technologist at the Dominguez Chemical Plant. He was named a Senior Technologist at San Francisco the same year and transferred to New York in a similar position in 1948. Mr. Grimma was named Assistant Manager of the Manufacturing Development Department in June 1950.

RECENT increases in the scope and complexity of the Shell Chemical Corporation Manufacturing activities have necessitated changes in the organizational structure of the Head Office Manufacturing Operations Department. To improve handling of production planning and scheduling, two new positions of Section Leader have been established. The new Section Leaders, and other positions affected by the change, are as follows:

	FROM	TO
D. B. LUCKENBILL	Assistant Superintendent, Operations, Houston Chemical Plant	Section Leader, Manufacturing Operations, Head Office
A. W. FAIRBAIRN	Assistant Superintendent, Martinez Chemical Plant	Section Leader, Manufacturing Operations, Head Office
H. J. THOMAS	Senior Technologist, Manufacturing Development, Head Office	Assistant Superintendent, Martinez Chemical Plant
J. W. HYDE	Chief Engineer, Houston Chemical Plant	Assistant Superintendent, Operations, Houston Chemical Plant
R. M. OAKS	Assistant Chief Engineer, Houston Chemical Plant	Chief Engineer, Houston Chemical Plant
M. H. R. COGAN	Senior Engineer, Houston Chemical Plant	Assistant Chief Engineer, Houston Chemical Plant

D. B. LUCKENBILL

A. W. FAIRBAIRN

H. J. THOMAS

J. W. HYDE

R. M. OAKS

M. H. R. COGAN

Shell Oil Company Marketing Organization Changes

M. BOGSTAHL

M. BOGSTAHL has been named Manager of Shell Oil Company's Head Office Marketing Engineering Department, succeeding C. J. Nobmann who has retired. Mr. Bogstahl, a graduate of New York University in electrical engineering, joined Shell in 1932 as an Electrician at Brooklyn, New York. He served in various operations positions in the New York Marketing Division in the following years and was appointed that Division's Operations Supervisor in 1941. He was named Assistant Operations Manager in 1945, and in 1950 moved to the San Francisco Office as Superintendent of Operations. Since January 1951, Mr. Bogstahl has served as Operations Manager of the St. Louis Division.

J. S. HOPPOCK

J. S. HOPPOCK has been named Operations Manager of the St. Louis Marketing Division, succeeding Mr. Bogstahl. Mr. Hoppock, a graduate in industrial engineering of Lehigh University, joined Shell in 1938 as a Salesman in the New York Division. In 1945 he was named an Aviation Representative in Head Office and subsequently served in sales positions in the New York and Los Angeles Divisions until 1950, when he was named Stockton District Manager in the Sacramento Division. In August 1953, Mr. Hoppock was appointed Sales Manager of the Detroit Division.

E. F. McGEE

E. F. McGEE has been named Sales Manager of the Detroit Marketing Division, succeeding Mr. Hoppock. Mr. McGee, who holds a Bachelor's degree in aeronautical engineering from Boston University, joined Shell in 1946 as a Salesman in the Boston Division. He served in various sales positions in Boston and Minneapolis until 1951, when he was named Manager of the Boston Division's Connecticut District. In 1953 Mr. McGee was named Manager of the Plant Division in the Head Office Marketing Operations Department. He was appointed Operations Manager of the Albany Division in May 1954.

H. WEARNE

HARRY WEARNE has been named Operations Manager of the Albany Marketing Division, succeeding Mr. McGee. Mr. Wearne, who holds a Bachelor's degree in architecture from Columbia University, joined Shell in 1940 as a Draftsman in the Head Office Marketing Operations Department. He served in various operations positions in Head Office and the New York Division until named Superintendent of Operations in the Atlanta Division in 1951. In 1952 Mr. Wearne returned to Head Office as Manager of the Structural Division, and was appointed Acting Manager of the Head Office Marketing Engineering Department in October 1955.

H. Y. SMITH

H. Y. SMITH has been named Operations Manager of the Portland Marketing Division, succeeding C. H. Radloff, who is retiring. Mr. Smith, who holds a Bachelor's degree in electrical engineering from the University of California, joined Shell in 1926 as an Engineer at the Wilmington Refinery. Following various California positions in Manufacturing, Exploration and Production, and Marketing, he was named Marketing Operations Manager in the San Francisco Office in 1948. Mr. Smith was appointed Operations Manager of the Minneapolis Marketing Division in August 1950.

D. T. GILMAN

D. T. GILMAN has been named Operations Manager of the Minneapolis Marketing Division, succeeding Mr. Smith. Mr. Gilman, who majored in civil engineering at the University of Alabama, joined Shell in 1937 as a Salesman in New Jersey. He became an Engineer at the Sewaren Plant in 1942 and, following various engineering positions there and in Head Office, was named Plant Superintendent at Sewaren in 1952. Mr. Gilman was named Superintendent of Operations at Sewaren Plant in February of this year.

Financial Organization Changes

W. F. REED

W. F. REED has been named Assistant Manager of the Insurance Department in Shell Oil Company's Treasury Organization. Mr. Reed, who holds a Bachelor's degree in business from Rice Institute, joined Shell in 1940 as a Clerk at the Houston Refinery. He became an Auditor in Head Office in 1949 and was appointed a Chief Accountant there in 1952. In 1953 he moved to the Tulsa Exploration and Production Area as Chief Accountant. Mr. Reed transferred to Shell Chemical Corporation in July 1955 as Assistant Manager, Treasury Department, in charge of the Financial Analysis and Budgets Section.

P. J. MOREL

P. J. MOREL has been named Assistant Manager of the Shell Chemical Corporation Treasury Department in charge of the Financial Analysis and Budget Section, succeeding Mr. Reed. Mr. Morel, who holds a Bachelor's degree in accounting from the College of the City of New York, joined Shell Oil Company in 1935 as a Clerk in the New York Office. He served in various financial positions in Head Office and was named a Senior Auditor in 1952. In 1953, Mr. Morel was appointed a Chief Accountant in the Shell Chemical Corporation Treasury Department, and was named in June 1955 as an Assistant Manager of the Department, in charge of Financial Accounting.

R. K. MEAD

R. K. MEAD has been named Assistant Manager of the Shell Chemical Corporation Treasury Department in charge of the Financial Accounting Section, succeeding Mr. Morel. Mr. Mead, who attended the University of California, joined Shell Oil Company in 1935 as a Clerk in the San Francisco Office. He joined Shell Chemical Corporation in 1943 and served in various financial positions at San Francisco, New York and Denver until appointed Treasury Manager of the Agricultural Chemical Sales Division in 1954.

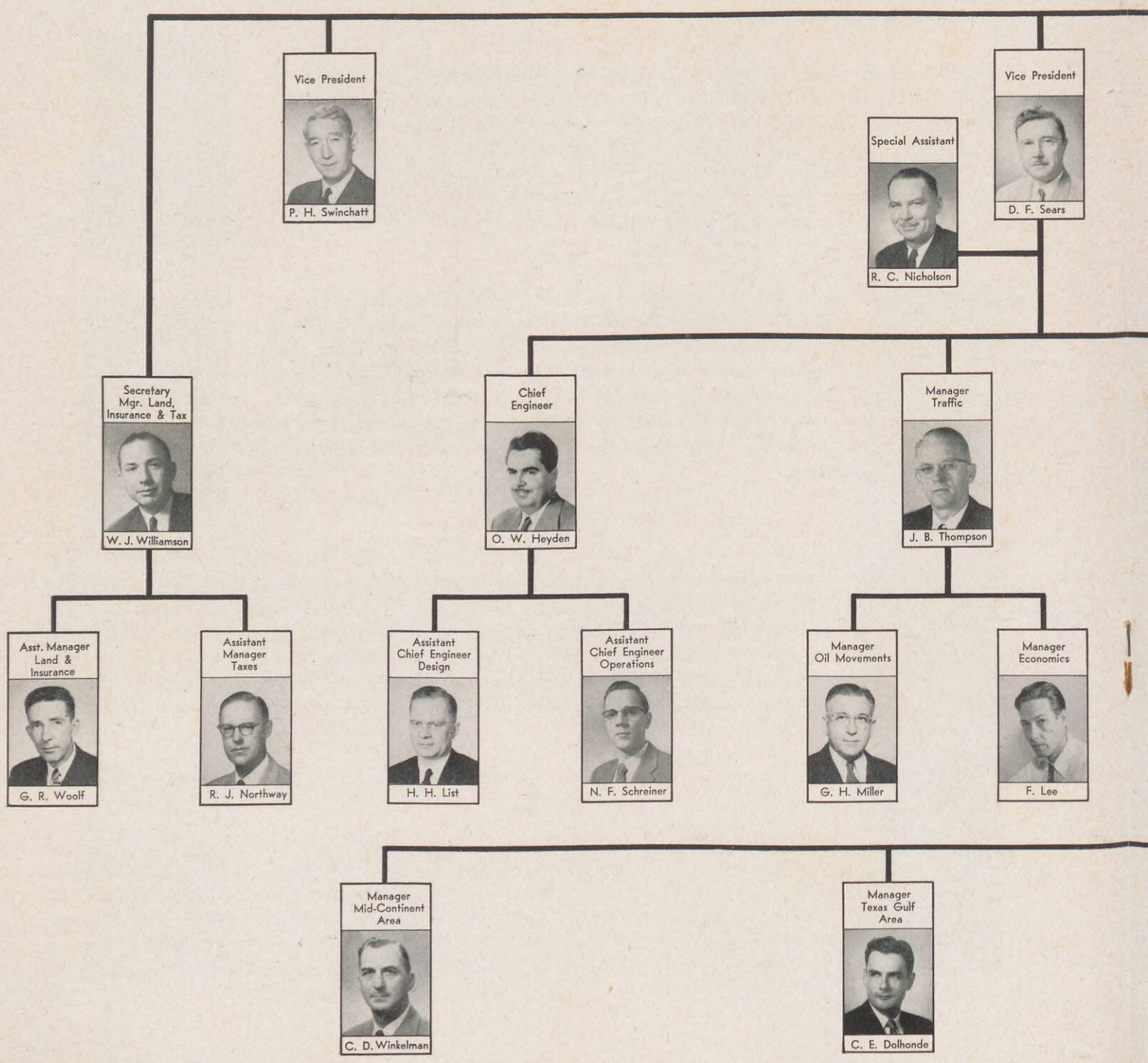
P. F. QUINN

P. F. QUINN has been named Treasury Manager of the Shell Chemical Corporation Agricultural Chemical Sales Division, succeeding Mr. Mead. Mr. Quinn, who holds a Bachelor's degree in accounting from Fordham University, joined Shell Chemical Corporation in 1947 as a Clerk in New York. He served in various financial positions in San Francisco and Houston, returning to New York in 1953 as a Senior Accountant in the Treasury Department's General Accounting Section. In February 1954, Mr. Quinn was named Chief Accountant at the Houston Chemical Plant.

The twelfth in a series of organization charts

Shell Oil Company

May—1956



Shell Pipe Line Corporation Organization Chart

President

Joe T. Dickerson

Administrative Assistant

G. D. Peace

Vice President and Treasurer

C. C. Combs

Manager Operating Services

J. K. Alfred

Assistant Treasurer

J. H. O'Hare

Manager Personnel and Indust. Relations

L. C. Geiler

Manager Operations Planning

R. V. Lahr

Manager Communications

J. W. La Boon

Manager Transport

H. Caughey

Chief Accountant

J. H. Singleton

Manager Purchasing-Stores

H. J. Woehrmann

Asst. Manager Personnel and Indust. Relations

L. F. Mason

Manager West Texas Area

G. G. Billings

Manager Rocky Mt. Division

J. E. Mims

Jobbers and distributors associated with Shell 25 years receive diamond-studded tie chains.

8,000 Years of

New Bronze Plaques Are
And Distributors Associated With

THE Silver Anniversary celebration of any close association traditionally is a significant occasion. And for many of Shell Oil Company's jobbers and distributors, the milestone they reached this year of 25 years—or more—of their Shell business association will be marked with special ceremonies.

Bronze plaques are being awarded in all 19 Marketing Divisions to approximately 325 firms which have been associated with Shell for up to 40 years. In addition, a diamond-studded tie clasp, tie chain or pin goes to each individual jobber or distributor who has been associated in any capacity with Shell for 25 years or more. Several Marketing Divisions already have held their award dinners; others will be held during coming weeks.

Shell has long recognized the significance of continued business associations with its distributors and jobbers by presenting plaques on the 10th anniversary of Shell association and at five-year intervals thereafter. But the quarter-century awards are new.

The new plaques feature a bronze Shell pecten and two

This array of bronze plaques was among those awarded to Shell jobbers and distributors in the St. Louis Marketing Division in the first presentation ceremony to those associated with Shell for 25 years or more. Plaques will go to about 325 jobbers and distributors.

f Selling Shell

re Being Awarded to Shell Jobbers
th Shell 25 Years or More

Anton Fassero, center, accepts a 35-year plaque on behalf of his company, Fassero Oil and Supply Company of Benld, Illinois. The award was made by J. G. Jordan, right, Vice President-Marketing, and R. S. Mitchell, Manager of the St. Louis Marketing Division.

Arch Howard, left, of the Howard Oil Company, Carollton, Illinois, smiles as he accepts his plaque from Mitchell. In the center is Tom Edington of the Butler County Oil Company, Poplar Bluff, Missouri.

engraved plates. One at the top of the plaque reads "Presented to (firm name)," and a lower one is engraved "in recognition of 25 years of loyal business association."

The tie clasps have one diamond for 25 years, two for 30 years and three for 35 years mounted in a gold Shell pecten. On a white border around the pecten is engraved "Shell Jobber" (or distributor) and the number of years of association.

The Silver Anniversary group represents 18 per cent of Shell's 1,800 jobbers and distributors from Maine to Hawaii. Many of those eligible for plaques as 25-year-and-over veterans grew with Shell as the uses and demand for petroleum products increased. Shell always has had jobbers and distributors in its marketing picture, some of whom started with a single tank wagon—often in conjunction with a coal and ice business—with kerosene as their largest-selling petroleum product. Other leaders of Shell's long-time associate firms began as service station attendants or employees of already-existing companies. Still other firms now looking forward to a half-century with Shell are the results of father-son perpetuation.

Three of the 35-year plaques awarded recently at St. Louis Marketing Division ceremonies, for example, were tributes to such father-son associations. One is the Fassero Oil and Supply Company of Benld, Illinois, founded by Benjamin Fassero 37 years ago and now owned by his son, Anton. The other two are the E. J. Munsterman Oil Company of Jerseyville, Illinois, and the F. A. Munsterman Oil Company of Hardin, Illinois. Both companies are operated by brothers, sons of F. J. Munsterman, who started as a Shell jobber in 1920.

The jobbers and distributors are key figures in Shell's system of marketing. They are responsible for distributing almost 50 per cent of Shell's products to consumers, supplementing Shell's direct marketing operations in different ways.

Shell jobbers are independent business men who purchase Shell products at wholesale and resell to retail dealers and consumers in a specified area.

A Shell distributor sells products to customers whose accounts are handled by Shell, and receives a commission on his sales. The products come from storage facilities owned or leased by the Company, but operated by the distributor.

Shell's 1,800 jobbers and distributors now are doing 80 per cent of the Company's fuel oil business, and almost half of Shell's gasoline sales—facts which emphasize their importance in the Company's sales picture.

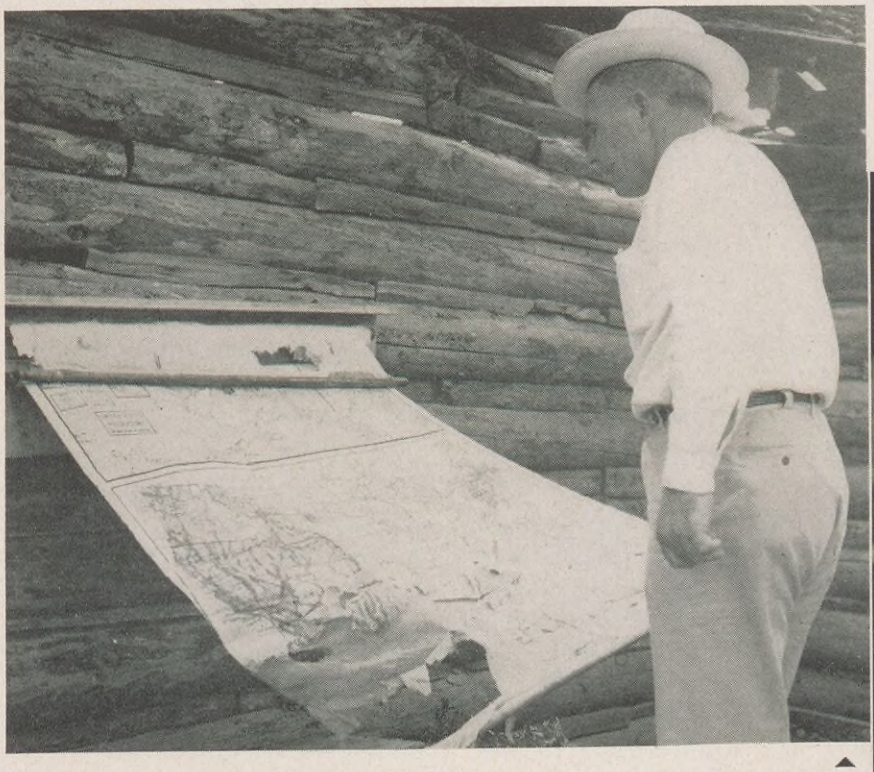
"Shell has the strongest and best group of jobbers and distributors in the business," J. G. Jordan, Vice President-Marketing, told the St. Louis award gathering. And, he added, Shell "expects to do its part to keep this group in a healthy and competitive position."

Not in the Line of Duty

OCCASIONALLY, as photographs are received for SHELL NEWS stories about Shell's diversified operations, an "off beat" picture appears in a group which does not illustrate the main theme of the story, but is interesting in its own right. Such a picture usually portrays the personal side of oil activity. It gives the news behind the news. On these two pages is a selection of such photographic sidelights.

DIRTY LAUNDRY: Contract drillers on Shell's first permanent offshore drilling platform in the Gulf of Mexico contrived the oil drum "washing machine" (left). A plunger, attached by a cable to moving machinery, maintains a sudsy agitation. Such wonders of automation were not possible in Alaska, however, where Shell geologists were exploring last summer. Geologist C. M. Molenaar (right) combined a kerosene tin, an old-fashioned wash board, and a one-elbow-power plunger made of a series of tin cans to do his washday chores.

DIRTY WORDS: Dust was often thick as contractors churned the Montana and Wyoming soil to lay the Butte Pipe Line under the supervision of Shell Pipe Line Corporation inspectors. But the pipe layers took advantage of the situation by setting up their own form of communication. Here Right-of-Way and Ditch Inspector H. H. McDonald reads a note scrawled on a dust-laden car: "Mike: Wait for me here. Al."

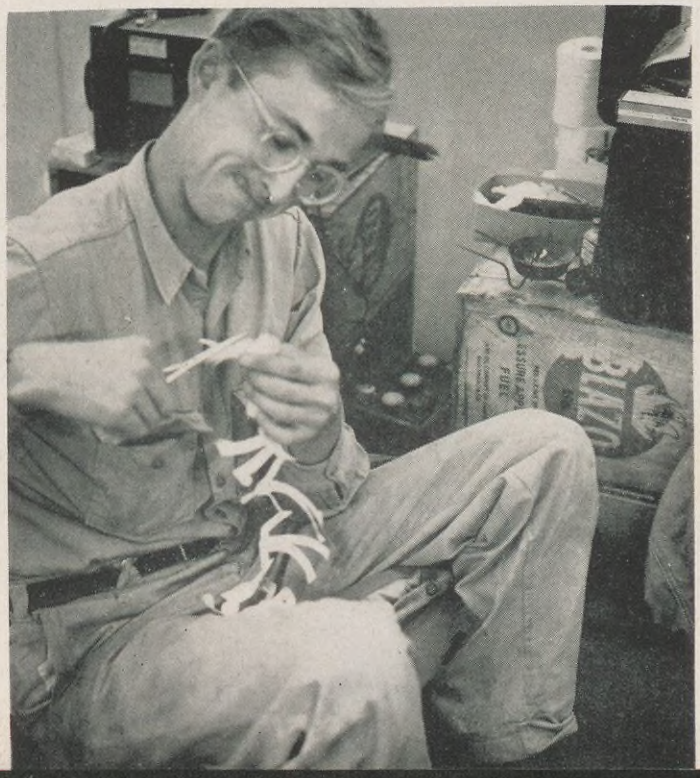


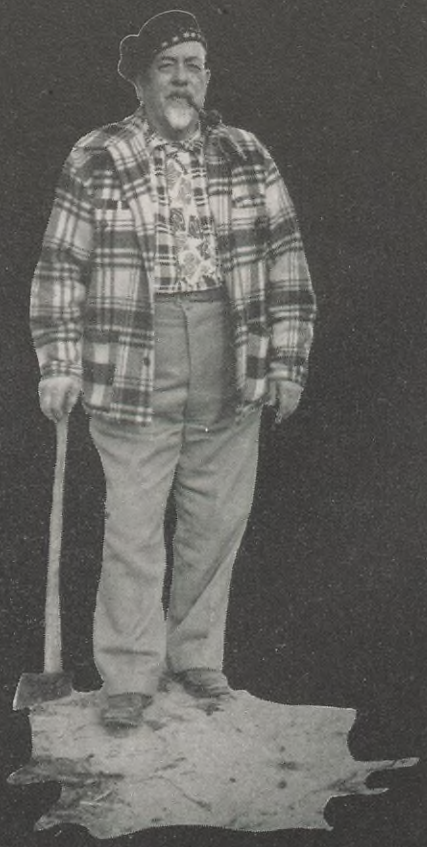
SCHOOL'S OUT: Near the path of the Butte Pipe Line in Wyoming, F. E. Harmon, one of Shell Pipe Line's chief inspectors, found these frayed maps on the wall of an abandoned homesteader's cabin, relics of days when the three R's were learned at home.

DIGITAL COMMUTER: Tramping Oklahoma's Ardmore Basin on a training field trip to view exposed geological formations, Shell exploitation engineers sometimes picked up more than knowledge. A touch of methiolate and a bandage took care of the matter.

RECREATION: Time hangs heavily on the hands of Shell geologists exploring Alaska when heavy rains, chinooks and williwaws kept them confined to their tents —sometimes for days at a time. But the exploring mind of a geologist is never at rest, as J. M. Beall demonstrates.

BOY FROM MARS: The 7-year-old son of Mr. and Mrs. Jack C. Russell, garden supply dealers in Orlando, Florida, is the envy of his "space hopper" friends, because the gear he dons for fanciful flights to the moon is a gas mask used by his father when custom spraying with soil fumigants formulated with Shell Chemical Corporation's allyl alcohol.





Me, clearing brush in 1953

With my wife at our wishing well on my 65th birthday

A Letter

A Shell Pensioner Writes of the Value of Careful and Early Planning for a Successful Retirement

(NOTE: When he retired in 1950, C. A. "Lindy" Amspaugh, the author of this "letter," was a general salesman in the Cleveland Marketing Division, with 20 years of Shell service. He and his wife now own and operate a year-round hunting and fishing resort near Combermere, Ontario, 180 miles northeast of Toronto. Like many another Shell pensioner, Mr. Amspaugh carries on a continuing correspondence with friends and former associates still with Shell. His comments are interesting because they tell of his years of planning for a busy and fruitful retirement, they reveal his attitudes toward his Company and the "Planning for Retirement" program now being established throughout Shell. This "letter" to you is a selection of passages from some of Mr. Amspaugh's letters to friends in Cleveland and New York.)

Dear .....:

It was with a great deal of pleasure that I read the article on "Planning for Retirement" in SHELL NEWS. . . . As for myself, I had long ago decided to retire in Canada to fish, hunt, roam the woods and just do whatever I wanted to. After starting to work for Shell and looking at the retirement plan, I decided that if I was careful with my pennies I could retire and do just that. I made many trips to various districts of Canada, always looking for a spot to locate. I first saw this section of the country (Combermere) in 1937, again in 1941, and in 1949. I decided then that this was where I wanted to live. . . .

In the fall of 1949, I came here for my three-week vacation, bought 3½ acres of woods and brush and ordered a cottage put up. I retired on January 1, 1950, and my wife and I moved here in May. We lived in the cottage while I built another and a garage. In the fall and winter of 1951, we got our own permanent home built, with full basement, furnace, hot and cold water, in fact everything we had in our home in Cleveland. . . .

Our home and buildings face east on Hydes Bay, a part of the Madawaska River, and we get the early sun. In the evening the moon sparkles across the water—a sight for lovers to behold. . . . Each of our cabins has a large combination kitchen and dining room with cabinets, sink, wood stove, electric refrigerator, dishes and cooking utensils; two bedrooms with closets in each, and a screened porch with dropleaf table where you can eat and look out over the bay. . . . There are deer, bears, red foxes, partridge and lots of ducks . . . bass, pike, pickerel and lake trout. . . .

I now have half the ground here in shape to use a lawn mower. . . . A year ago I used the spare time from hunting and fishing through the ice

from Lindy's Cabins

to build four beds, a dresser, chest of drawers, cedar chest, sewing machine cabinet, and a gun case. . . . But it has been the activity of cleaning up, leveling ground, looking after guests and taking them fishing that has kept me well and healthy. . . . I am in better health today than I was when I retired. I believe it is due to exercise, living in the pine woods. You don't retire from activity if you want good health. I've never worked harder than I have the past five years. It's been a pleasure.

. . . It was J. G. Jordan (Cleveland Division Manager 1932-43, now Vice President, Marketing, Shell Oil Company) who first explained to the Cleveland group Shell's retirement program. There was no one to talk to then like you now have in the "Planning for Retirement" program, but the seed was planted and I started to look forward to retirement and where to go, what to do. . . . Now that you have a program whereby someone can be consulted who devotes all his time to retirement plans for others and who gathers data to be placed before them, it surely makes it better for one to meet the problems and make plans.

All the good things my wife and I now have came about because I was able to get a picture when first the retirement program was painted. I say to any Shell employee, you can't wait until the last year to decide what you're going to do and expect to be happy. . . . Start planning years ahead and, with your Shell pension, you can do the things you have always wanted to do. . . . You need to save something besides your Provident Fund. Be thrifty. Sure, you may have to forego some parties and so-called good times. But take your vacations and enjoy them — Shell's paying for the time. After all, when you reach retirement age those so-called good times you missed won't mean a thing. You'll be just beginning to live and, with your children and grandchildren, will have found out how to enjoy life.

. . . We here are enjoying life and our retirement from the hustle and bustle of city life. We go to sleep at night listening to the whippoorwills calling and are at peace with ourselves, the world and God.

Sincerely,

Lindy Amspaugh

Guest cabins and the boat dock on the river

Our home has everything we had in Cleveland

They

H. E. ARMSTRONG
Pipe Line Department
Blue Mound, Illinois

R. M. ARNOLD
Shell Pipe Line Corp.
Texas Gulf Area

E. CHRISTIANSEN
Seattle Division
Operations

J. W. CLINKSCALES, JR.
Tulsa Area
Gas

E. C. COPPOLA
Martinez Refinery
Engineering

G. W. H. COSTNER
Baltimore Division
Operations

A. W. CROCKER
Portland Division
Operations

E. B. DAVIS
Pacific Coast Area
Gas

C. A. EDDY
Martinez Refinery
Dispatching

H. EULER
New York Division
Operations

A. T. FANSLER
Seattle Division
Operations

A. B. FRY
Tulsa Area
Production

A. GAUBERT
Norco Refinery
Engineering

J. T. GRABLE
Sacramento Division
Operations

R. GRANGE
Houston Refinery
Thermal Cracking

F. M. HARRISON
Wilmington Refinery
Treasury

V. J. HART
Wilmington Refinery
Engineering

O. A. HELLAND
Portland Division
Treasury

R. R. HICKOK
Pipe Line Department
Long Beach, California

A. L. HORRELL
Pacific Coast Area
Gas

T. S. JOHNSTON
Head Office
Marketing

J. A. JONES
Shell Pipe Line Corp.
West Texas Area

J. G. KINDRED
Shell Chemical Corp.
Houston Plant

Have Retired

S. F. KONZEN
Shell Chemical Corp.
Houston Plant

H. F. LAER
Pacific Coast Area
Production

R. B. LAMBERTON
New York Division
Sales

J. J. LENGENFELDER
New York Division
Operations

W. E. McDONALD
San Francisco Division
Manager

G. L. MINOR
Tulsa Area
Production

A. L. NEFF
St. Louis Division
Operations

C. J. NOBMANN
Head Office
Marketing

K. E. PEDERSEN
Pacific Coast Area
Purchasing-Stores

M. D. POOL
Shell Pipe Line Corp.
West Texas Area

W. W. PROND
Pacific Coast Area
Production

L. G. REIM
Tulsa Area
Production

E. H. RICHARDSON
Shell Pipe Line Corp.
West Texas Area

E. H. SCHARFENBERG
San Francisco Office
Treasury

J. SCHWEIGER
Chicago Division
Operations

E. P. SWEENEY
San Francisco Division
Operations

B. F. TODD
Wilmington Refinery
Engineering

O. A. VERNON
Indianapolis Division
Operations

F. WALKER
Houston Refinery
Engineering

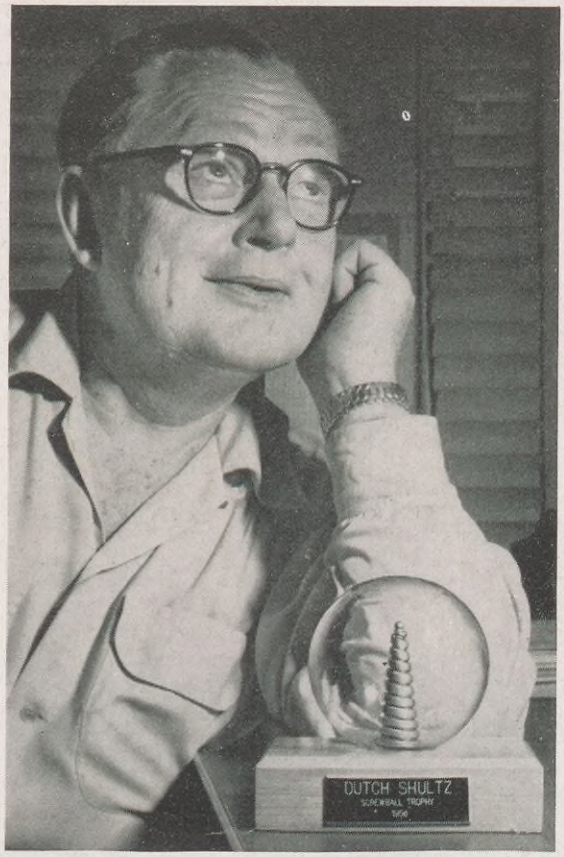
G. E. WESTENRIDER
Martinez Refinery
Stores

M. B. WHITE
New York Division
Operations

J. K. WIENS
Shell Development Company
Emeryville

A. C. WIRES
Head Office
Transportation & Supplies

SHELL COAST TO COAST



Instrumentalist

The 1955 Screwball Award is the official name of the glass-inclosed threaded trophy won by C. L. Shultz, Instrument Engineer at Shell Oil Company's Houston Refinery. The Instrument Engineers' Symposium at Texas A&M College presented its eighth annual award to Shultz because of his outstanding contributions to the profession and to the Symposium. The award's name comes from engineers' slang for those who putter around with instruments. Shultz keeps his trophy, but he must design and make a new one for next year's winner.

Safety Counsel

V. W. Tipton, right, truck driver in Shell Pipe Line Corporation's Texas Gulf Area, discusses his safe driving award from the Texas Safety Association with Houston Warehouse Clerk J. L. Kennedy. Tipton, a Shell driver since 1932, was named Texas' safest fleet truck driver for 1955 by the state safety group. He has compiled more than 950,000 miles without an accident in his 23 years of driving throughout the state, an average of more than 40,000 miles each year.

Good Scout

T. C. Baskin, a Driver-Salesman in the Stockton District of Shell Oil Company's Sacramento Marketing Division, has been awarded a plaque for his outstanding service to Boy Scouting in Stockton. Baskin, who has been active in Scout organization work there for five years, recently was appointed a District Area Commissioner. He has been with Shell for 10 years.

Elected

M. L. Griffin, left, Manager of the Administrative Office and Employee Development, Marketing, in Shell Chemical Corporation's Head Office, has been elected President of the Compressed Gas Association. C. H. Wager, right, Manager of the Traffic Department in Shell Oil Company's Head Office, is new chairman of the Manufacturing Chemists' Association's Traffic Committee.

Watered Stock

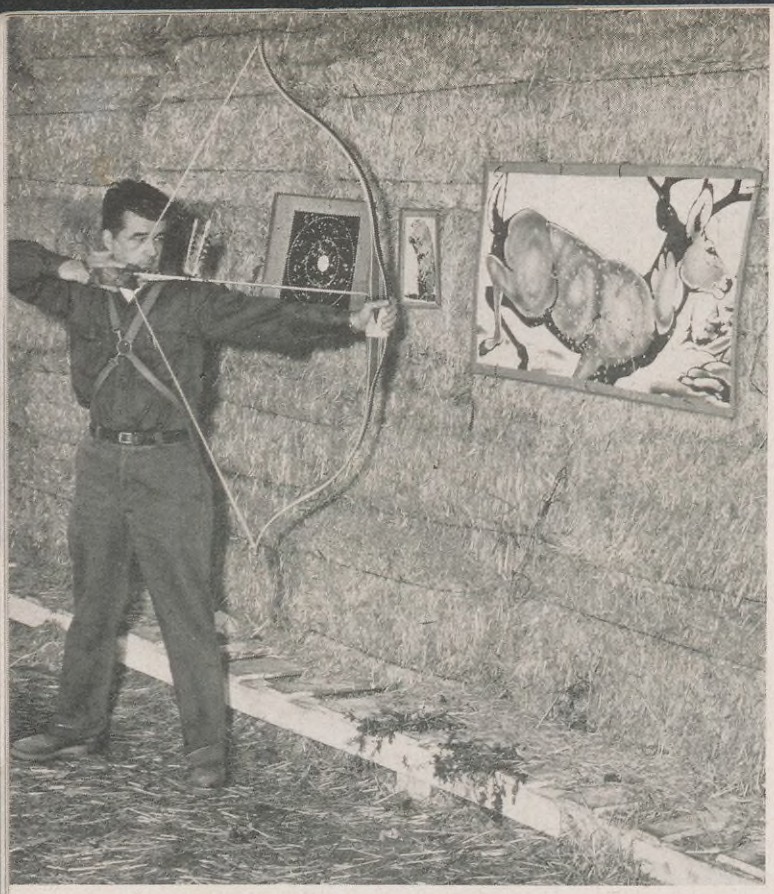
J. C. TUCKER is a fish farmer whose stock—in 15 ponds—has multiplied from a hobby to a profitable part-time business.

Tucker, who is Safety Representative in the East Texas Division of Shell Oil Company's Houston Exploration and Production Area, farms swarms of minnows and frogs at his farm near Kilgore, Texas. He started raising minnows about five years ago as a private, handy source of fishing bait. Through planning and work, Tucker's fish farm grew to 15 ponds and a respectable income. Minnows bring from $15 to $20 per thousand from retail minnow dealers. While Tucker can't inventory his silvery stock, he estimates he has from 25,000 to 50,000 minnows in each pond.

"I found out that as long as I had minnows, I had frogs," he said. Checking with game and fish officials, he learned that the demand for frogs is greater than the steady supply. So he fenced six of his ponds and went into the frog business. Tucker installed lights around the fenced ponds to attract bugs—an abundant source of free frog food.

To round out his stock of live bait, Tucker also raises worms. He found a worm turns—into cash—at one cent each retail, or $5 per thousand wholesale. Two large boxes filled with moist soil serve as worm breeders. Tucker attempts no estimate of how many future fish-lures he has in the boxes.

Tucker, who has 22 years of Shell service, plans to continue his hobby after he retires.



Fifty-Pound Pull

J. L. BLACK, left, an Operator at Shell Oil Company's Wilmington Refinery, is a deer-stalker who pulls a 50-pound string instead of a trigger to bag a buck.

Black, who became interested in archery only two years ago, brought down two bucks with his bow and arrows during the last deer-hunting season in California's Malibu Mountains.

He started with a lemon wood bow purchased for $10. But, like hobbyists in many fields, he now prefers to make his own equipment. He currently uses the second bow he made, a 50-pound "working recurve" one made of laminated wood and glass with a maple core. The 64-inch bow slings an arrow at a speed of more than 96 miles per hour.

Black also makes his own arrows, using two jigs of his own design. One of the jigs trims the arrow's feathers to exact specifications. The other machine measures the stiffness of each arrow. The shaft's stiffness must be tailored precisely to the bow's weight or the arrow will veer when it is fired.

For target shooting Black uses aluminum arrows. But for deer hunting, he uses shafts made of Port Orford cedar—a soft wood with a hard and straight grain found only in Oregon.

"Future" Film ▲

"Look to the Future," a 23-minute film which reviews Shell's 1955 achievements, now is being shown to employees throughout the nation. M. E. Spaght, above, Executive Vice President of Shell Oil Company, was one of the executives who addressed groups of employees before each showing of the color strip film.

Drama Medal ▶

C. D. Abrahamson of the Regina Production Division of Shell Oil Company's Calgary Exploration and Production Area, recently received a medal from the Governor General of Canada for his "contributions to community drama and culture." Abrahamson is active in the Little Theater Society at Regina.

Student Leader ▶

R. M. Sprinkle, center, son of M. R. Sprinkle, Manager of Manufacturing Development for Shell Chemical Corporation in Head Office, has been appointed Deputy Director of the Colorado Civil Defense Agency in charge of student affairs. He is shown receiving his appointment from retired Marine Corps Lieut. Gen. H. L. Larsen, left, Director of Colorado Civil Defense, and Lieut. Col. J. P. Doidge, Deputy State Director.

Service Birthdays

Thirty-Five Years

L. KEHRER
Denver Area
Exploration

D. B. PEERY
Tulsa Area
Production

O. J. SCHEXNAYDER
Norco Refinery
Engineering

Thirty Years

M. C. ALCORN
Pipe Line Department
Los Angeles, California

W. E. BARR
Pacific Coast Area
Gas

E. J. BERRY
Pacific Coast Area
Purchasing-Stores

R. M. BERRY
New Orleans Area
Purchasing-Stores

G. B. BERRYMAN
San Francisco Office
Marketing

H. H. BLACK
Los Angeles Division
Sales

L. J. BURK
Martinez Refinery
Cracking

W. D. CHASE
Wilmington Refinery
Engineering

G. D. COOK
Tulsa Area
Production

A. M. CORVELLO
Martinez Refinery
Control Laboratory

R. S. DAVIS
Portland Division
Sales

F. C. DODSWORTH
Pipe Line Department
Tracy, California

H. L. DULANEY
Tulsa Area
Purchasing-Stores

L. C. FISCHER, JR.
Pipe Line Department
East Chicago, Indiana

J. F. GOLDSBERRY
Head Office
Manufacturing

R. B. HOWELL
Houston Refinery
Distilling

G. K. KENDALL
Portland Division
Operations

R. F. KING
Los Angeles Division
Operations

F. LANG
New Orleans Area
Exploration

E. A. LEACH
Wilmington Refinery
Thermal Cracking

G. D. LOUVIER
Wood River Refinery
Treasury

R. J. LUNDQUIST
Martinez Refinery
Dispatching

J. A. MASON
Wood River Refinery
Engineering

E. D. MATHEWSON
Martinez Refinery
Engineering

Thirty Years (cont'd)

W. R. MAYBERRY
Anacortes Refinery
Administration

N. MILLER
Pipe Line Department
East Chicago, Indiana

L. NICHOLAS
Norco Refinery
Engineering

A. D. NORTHCUTT
Anacortes Refinery
Pers. & Indus. Rel.

E. M. O'DANIEL
Shell Pipe Line Corp.
Mid-Continent Area

E. C. SCHWALB
Wood River Refinery
Catalytic Cracking

V. P. SHEELY
Wilmington Refinery
Alkylation

W. K. SMITH
Sewaren Plant
Laboratory

D. K. STEWART
Pacific Coast Area
Production

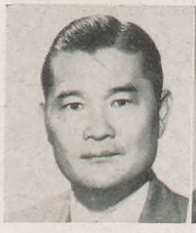
E. N. VAN DUZEE
Midland Area
Production

D. F. VAN FOSSEN
Wood River Refinery
Utilities

L. W. WALPOLE
Calgary Area
Exploration

R. E. WOHLERT
Wood River Refinery
Engineering

Twenty-Five Years



W. S. AMIOKA
Honolulu Division
Treasury

C. W. BEARSE
Boston Division
Operations

J. L. BERRY
Pacific Coast Area
Exploration

T. E. BLACK
Houston Area
Production

J. E. CROOK
Seattle Division
Operations

E. W. CURRAN
Tulsa Area
Production

L. DILLOW
Wood River Refinery
Engineering

D. A. DRING
Pacific Coast Area
Production

F. W. KOHLER
Cleveland Division
Operations

R. McKAY
Shell Chemical Corp.
Head Office

W. E. PITT
Head Office
Financial

W. E. PULLWITT
New York Division
Operations

G. L. ROUGIER
Head Office
Manufacturing

R. B. SCHIERMEYER
St. Louis Division
Treasury

E. F. SHORT
Tulsa Area
Production

R. L. SPATES
Houston Refinery
Dispatching

J. A. TODD
Pacific Coast Area
Production

E. C. VAN SICKLE
Pacific Coast Area
Purchasing-Stores

E. E. WILLIAMS
Head Office
Marketing

J. W. WINTER
Los Angeles Division
Operations

SHELL OIL COMPANY

Head Office

20 Years

G. H. Link.....Marketing

15 Years

Dorothy D. Greene.....Administration
E. R. Sproule.....Trans. & Supplies

10 Years

E. F. Koenig.....Financial
S. B. Moeller.....Marketing
J. W. Polick.....Marketing
E. R. Sauermilch.....Expl. & Prod.
R. J. Sorenson.....Org. & Salary
R. L. Yandell.....Marketing

San Francisco Office

15 Years

E L. Cloonan.....Purchasing-Stores

10 Years

P. H. Walton.....Public Relations

Exploration and Production

TECHNICAL SERVICES DIVISIONS (Houston)

15 Years

Naomi C. Price.....Production

CALGARY AREA

10 Years

E. A. Ettinger.....Production
R. L. Hope.....Administration
R. E. Urton.....Production

DENVER AREA

10 Years

G. W. Chase.....Exploration
D. N. Johnson.....Legal

HOUSTON AREA

20 Years

J. L. Langlois, Jr.....Exploration
J. R. McEntee.....Production
F. A. Sawyer.....Transport
R. N. Wallis.....Legal

15 Years

V. Denton.....Production
J. O. Gumm.....Production
A. A. St. John.....Purchasing-Stores
H. H. Zimmerman.....Exploration

10 Years

R. W. Beard.....Production
J. T. Davis.....Production
R. F. Kinsey.....Production
G. E. Talbott.....Production

MIDLAND AREA

15 Years

F. P. May.....Production
J. W. Rustamier.....Exploration
J. C. Seibert.....Gas

10 Years

R. E. Hendrick.....Production
C. O. Jones.....Production
G. L. Thomas.....Production

NEW ORLEANS AREA

20 Years

J. Allison.....Production
J. J. Laurent.....Transport
M. E. Ohsfeldt.....Production

15 Years

H. W. Buck.....Gas
K. R. Dupuy.....Production
B. H. Kelley.....Exploration
E. O. Loftin.....Production
E. B. Whitaker.....Production

10 Years

A. J. Dugas.....Production
W. P. Oubre.....Production
L. J. Vial.....Production

PACIFIC COAST AREA

20 Years

J. F. Antrim.....Production
H. J. Shields.....Production
Frances M. Swaim.....Production

15 Years

H. B. Cree.....Gas
E. R. David.....Exploration
M. H. Schlueter.....Production
G. N. Ward.....Production

10 Years

J. L. Bowen.....Production
J. L. Cole.....Treasury
R. W. Fox.....Production

TULSA AREA

20 Years

R. E. Fair.....Production
H. I. Francis.....Gas
D. K. Harris.....Production
J. T. Kaufman.....Exploration

15 Years

R. C. Ballard.....Production
H. V. Mackie.....Production
J. L. Myers.....Production
J. K. Odell.....Gas
J. H. Teague.....Production

10 Years

L. L. Denney.....Exploration
E. W. Steffenhagen.....Production

Manufacturing

HOUSTON REFINERY

20 Years

C. C. Bateman.....Engineering
D. Holsteyn.....Engineering

15 Years

G. M. Blount.....Engineering
J. Esterak.....Treating
C. L. Lawrence.....Engineering
B. J. McCambridge.....Treasury
M. F. Sherman.....Pers. & Indus. Rel.
H. J. Wheeler.....Engineering
R. O. Williams.....Lubricating Oils

10 Years

L. B. Beard.....Dispatching
B. L. Kelly.....Engineering
R. Miles.....Engineering
A. H. Smith.....Engineering
H. H. Wagoner, Jr.....Engineering
W. R. Ward.....Engineering

MARTINEZ REFINERY

20 Years

E. J. Bell.....Treasury
B. A. Foster.....Engineering
W. J. Gandera.....Research Laboratory
B. I. Lee.....Dispatching
J. F. O'Connell.....Dispatching

15 Years

H. F. Bovee.....Compounding
O. J. Coberly.....Engineering
R. E. Eaton.....Dispatching
F. A. Koch.....Research Laboratory
R. G. Maxwell.....Distilling
W. M. Slape.....Dispatching
A. Thompson.....Engineering
L. J. Vecchi.....Engineering

10 Years

G. L. Alves, Jr.....Engineering
E. D. Branchcomb.....Research Laboratory
C. B. Calhoun.....Dispatching
L. S. Castro.....Engineering
M. L. Cothran.....Cracking
G. N. Facer.....Dispatching
L. B. Gutierrez.....Engineering
M. Holovka.....Dispatching
M. L. Lewis.....Engineering
A. S. Madrid.....Distilling
J. Molta.....Engineering
J. R. Morris.....Cracking
R. W. Peeler.....Lubricating Oils
A. L. Perry.....Engineering
A. Rose.....Compounding
E. Rose.....Engineering
O. F. Stephens.....Dispatching
G. W. Taylor.....Lubricating Oils

NORCO REFINERY

15 Years

N. J. Ayme.....Utilities
E. C. Baudouin.....Laboratory
V. J. Braud.....Laboratory
P. A. Dufrene.....Engineering
T. J. Friloux.....Engineering
E. C. Hamersly, Jr.....Catalytic Cracking
L. J. Jumonville, Jr.....Catalytic Cracking
N. J. Keller.....Distilling
C. J. Landry.....Engineering
N. A. Millet.....Engineering
J. A. Schexnayder.....Engineering
J. T. Schexnayder.....Engineering
F. A. Simoneaux.....Engineering
R. A. Waguespack.....Pers. & Indus. Rel.

10 Years

P. McCurdy.....Technological

WILMINGTON REFINERY

20 Years

C. R. Bateman.....Engineering
E. G. Brand.....Engineering
F. S. Hummel.....Alkylation
W. R. Stafford.....Engineering

15 Years

D. R. Holley.....Fire & Safety
C. G. Laspe.....Engineering

10 Years

E. D. Charlton.....Engineering

WOOD RIVER REFINERY

20 Years

M. Barach.....Compounding
N. A. Bono.....Engineering
D. J. Grieve.....Control Laboratory
M. E. Harris.....Control Laboratory
C. H. Irwin.....Utilities

C. W. Jenkins ..... Distilling
H. L. Rice ..... Control Laboratory
E. H. Schuette ..... Engineering
W. J. Stobbs ..... Railroad Section

15 Years

T. V. Allaria ..... Thermal Cracking
G. A. Bain ..... Engineering
E. V. Bourland ..... Engineering
C. L. Broaddus ..... Engineering
C. M. Coleman ..... Engineering
D. L. Disher ..... Compounding
M. C. Franich ..... Engineering
R. Hamilton ..... Compounding
M. D. Harmon ..... Engineering
J. H. Harpole ..... Compounding
W. C. Henry ..... Dispatching
W. J. Johnson ..... Control Laboratory
T. C. Jouett ..... Alkylation
L. R. Kinser ..... Control Laboratory
H. G. McGee ..... Engineering
D. C. Miller ..... Compounding
R. M. Neely ..... Stores
J. E. Nicholson, Jr. ..... Engineering
P. E. Potter ..... Engineering
G. E. Powell ..... Gas
R. L. Prough ..... Control Laboratory
E. E. Pruitt ..... Engineering
J. Renner, Jr. ..... Engineering
E. A. Rucker ..... Distilling
W. N. Sanders ..... Compounding
W. E. Semon ..... Thermal Cracking
W. J. Shirley ..... Engineering
A. L. Wetzel ..... Control Laboratory
J. D. Wiltshire ..... Alkylation

10 Years

C. E. Best ..... Catalytic Cracking
J. E. Douglas ..... Research Laboratory
J. Glover ..... Engineering
J. G. McCleish ..... Engineering

Marketing

MARKETING DIVISIONS

20 Years

R. Scott ..... Atlanta, Operations
G. O. Miller ..... Boston, Sales
G. J. Hammond ..... Chicago, Sales
J. A. Lind ..... Los Angeles, Operations
W. G. Eberle ..... Minneapolis, Sales
H. E. Manning ..... Minneapolis, Sales
R. S. Tucker ..... New York, Sales
W. L. Cowley ..... Sacramento, Operations
Margaret L. Landon ..... Sacramento, Treasury
P. B. Smith ..... Sacramento, Sales
D. F. Tiner ..... Sacramento, Operations
D. C. Ross ..... San Francisco, Sales
H. W. Rydman ..... San Francisco, Operations
Fay W. Sterling ..... San Francisco, Operations
A. E. Freeborn ..... Seattle, Treasury

15 Years

J. E. Hudson ..... Atlanta, Operations
M. K. Leroy ..... Baltimore, Treasury
M. M. Buck ..... Boston, Sales
W. R. Dagley, Jr. ..... Boston, Treasury
C. J. Maes ..... Chicago, Operations
R. D. Lint ..... Cleveland, Operations
H. W. Pliske ..... Cleveland, Sales
A. S. Lovelady ..... Detroit, Operations
B. S. Iha ..... Honolulu, Operations
D. P. Crawford ..... Indianapolis, Operations
L. R. Barth ..... Los Angeles, Operations
G. O. Egert ..... Los Angeles, Operations
A. T. Kelsey ..... Los Angeles, Sales
R. L. Parkhurst ..... Los Angeles, Sales
R. V. Powell ..... Los Angeles, Sales
F. R. Weddick ..... Los Angeles, Operations
E. R. Mustoe ..... New Orleans, Operations
G. J. Treffert ..... New York, Sales
J. W. Cameron ..... Portland, Sales
G. F. Carpenter ..... Seattle, Operations

10 Years

H. G. Sheffield ..... Atlanta, Sales
E. B. Wisowaty ..... Atlanta, Sales
E. B. Arey, Jr. ..... Baltimore, Sales
F. J. Leray, Jr. ..... Baltimore, Operations
J. W. Ray, Jr. ..... Baltimore, Operations
L. Harmon ..... Chicago, Operations
J. R. Vavra ..... Chicago, Operations
C. H. Woodworth ..... Cleveland, Operations
M. V. Koski ..... Detroit, Treasury
V. M. Marrocco ..... Detroit, Operations
T. L. Wells ..... Detroit, Operations
W. A. Aipa ..... Honolulu, Operations
W. H. Cougill ..... Indianapolis, Operations
W. H. Willard ..... Indianapolis, Operations
R. J. Janisse ..... Los Angeles, Operations
J. P. St. Amour ..... Los Angeles, Treasury
E. P. Schatzlein ..... Minneapolis, Operations
J. K. Barron ..... New Orleans, Operations
N. J. Lorenz ..... New York, Operations
J. R. Tate ..... New York, Sales
N. M. Barrett ..... Portland, Operations
R. A. Hillman ..... Portland, Operations
L. W. Libke ..... Portland, Operations
L. I. Benedict ..... Seattle, Treasury
L. Werner ..... Shell American, Sales

SEWAREN PLANT

20 Years

S. Fulop ..... Compound

15 Years

W. A. Brose ..... Terminal
A. A. Discavage ..... General Plant
L. N. Nelson ..... Engrg. & Maint.
H. A. Stern ..... Compound

10 Years

H. H. Olsen ..... Engrg. & Maint.
E. R. Serge ..... Laboratory

Pipe Line Department

20 Years

J. F. Johnson, Jr. ..... Indianapolis, Ind.

15 Years

R. E. Wheeler ..... Tracy, California

SHELL CHEMICAL CORPORATION

20 Years

P. E. Ehret ..... Dominguez
H. E. Covell ..... Martinez
F. B. Ball ..... Ventura

15 Years

J. L. Pennington ..... Dominguez
D. T. Urmston ..... Head Office
R. B. Bush ..... Houston
E. J. Davidson ..... Houston
P. P. Dominy ..... Houston
C. E. Houghton ..... Houston
W. R. Lindsey ..... Houston
G. Washington ..... Houston
J. H. Berger ..... Martinez
T. A. Marchi ..... Martinez
J. L. Campbell ..... Norco
C. L. Millet ..... Norco
D. L. Roux ..... Norco
C. G. Thibodaux ..... Norco
R. E. Inzerillo ..... Shell Point
H. E. Paris ..... Shell Point
N. E. Cowan ..... Ventura

10 Years

B. N. Falkoff ..... Dominguez
F. W. Slater ..... Dominguez
Doris Sturch ..... Dominguez
D. P. Kirk ..... Houston
W. B. Mikeska ..... Houston
J. C. Odom ..... Houston
A. B. Welter ..... Houston
V. W. Wilson ..... Houston
E. L. Reed ..... San Francisco
J. R. Turner ..... San Francisco
R. E. Brooks ..... Shell Point
H. Cosentino ..... Shell Point
E. K. Hartman ..... Shell Point
M. A. Franklin ..... Ventura

SHELL DEVELOPMENT COMPANY

20 Years

A. P. Drasky ..... Emeryville
J. N. Knoche ..... Houston

15 Years

M. F. Karstad ..... Emeryville
E. L. Spencer ..... Emeryville
R. W. Stevenson ..... Emeryville
H. E. Stewart ..... Emeryville

10 Years

G. W. Gaertner, Jr. ..... Denver
P. E. Porter ..... Denver
J. B. Accinelli ..... Emeryville
L. F. Bennett, Jr. ..... Emeryville
R. E. Benson ..... Emeryville
C. P. Brewer ..... Emeryville
J. W. Burke ..... Emeryville
R. A. Cava ..... Emeryville
R. L. De Vault ..... Emeryville
J. D. Doran ..... Emeryville
R. E. Dunn ..... Emeryville
Montelle L. Hull ..... Emeryville
O. Johnson ..... Emeryville
J. J. Madison ..... Emeryville
S. R. Matsuda ..... Emeryville
G. G. Pritzker ..... Emeryville
M. J. Schick ..... Emeryville
H. Stone ..... Emeryville
J. S. Levine ..... Houston
J. C. Richardson ..... Houston
R. A. Rowland ..... Houston
W. J. Hughes ..... Modesto

SHELL PIPE LINE CORPORATION

20 Years

L. R. Adkisson ..... Mid-Continent Area
D. Black ..... West Texas Area
H. H. Bray ..... Mid-Continent Area
E. M. Cook ..... Mid-Continent Area
L. G. Holifield ..... West Texas Area

15 Years

D. M. Aldridge ..... Mid-Continent Area
J. E. Allen ..... Mid-Continent Area
C. W. Chessman ..... Mid-Continent Area
J. T. Davis ..... Texas Gulf Area
E. C. Ealey ..... Mid-Continent Area
J. V. Glover ..... West Texas Area
M. W. Gove ..... Texas Gulf Area
R. E. Miries ..... Mid-Continent Area
N. W. Smith ..... Mid-Continent Area

10 Years

G. O. Cloninger ..... Mid-Continent Area
J. A. Dunn ..... Texas Gulf Area
J. K. Reid ..... Texas Gulf Area
J. E. Tanner ..... Mid-Continent Area

matters of *fact*

Extras

Just as extra plant foods and fertilizers help to produce an abundant harvest in your garden, Shell adds "extras" in the form of benefits to help you reap a more abundant life.

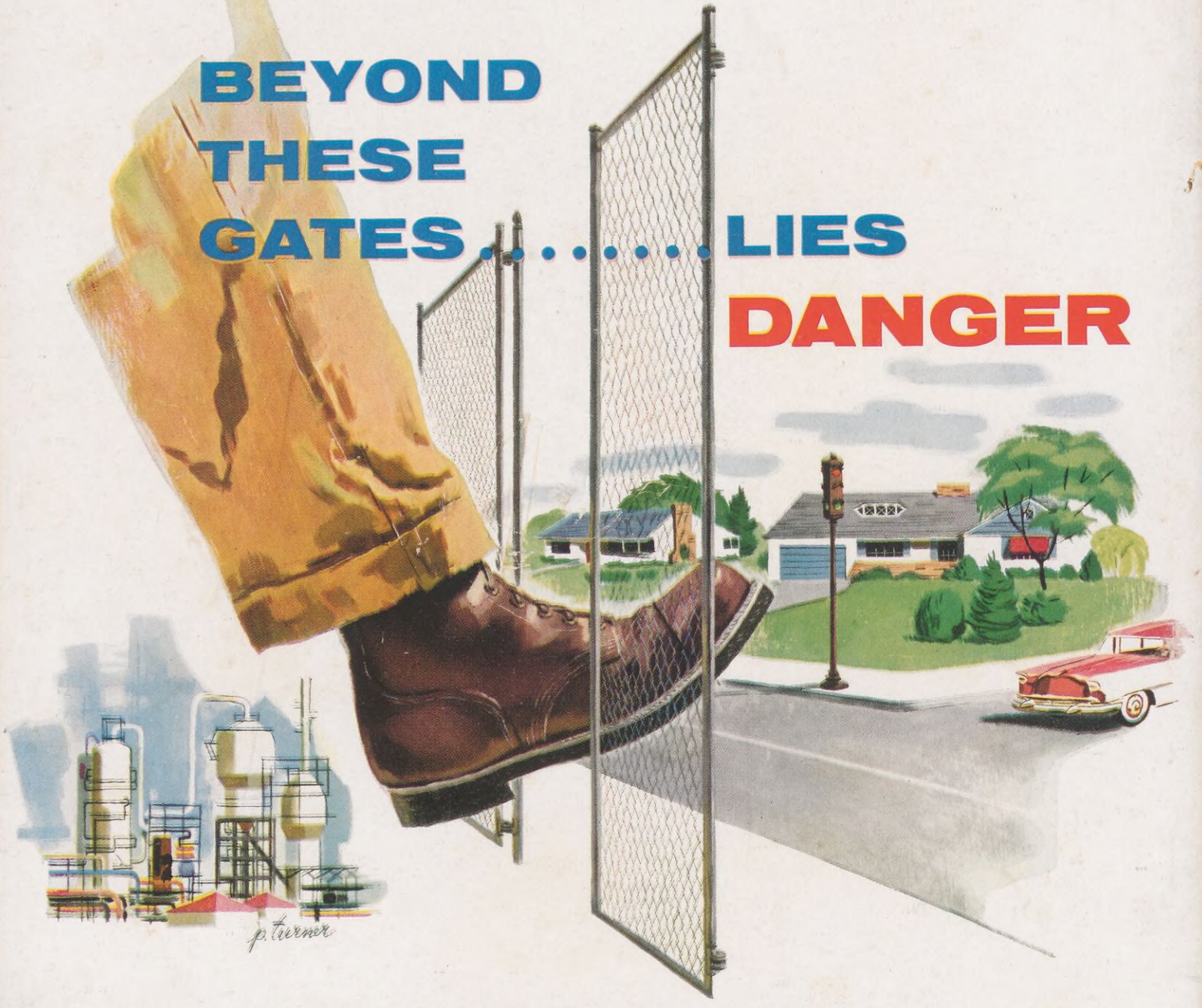
Shell's "extras" are provided in a comprehensive employee benefit program at a cost of approximately 30 cents over and above every payroll dollar.

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

J. B. Bradshaw
4710 Bell
Houston, Texas

SCC

BEYOND THESE GATES..... LIES DANGER



Records show that Shell employees suffer three times as many disabling accidents away from the job as they do at work. A principal reason for this is the attention given to safety equipment and safe practices during your working day.

Apply these principles of accident prevention 24 hours each day — and make your home and car safe, happy places for you and your family.