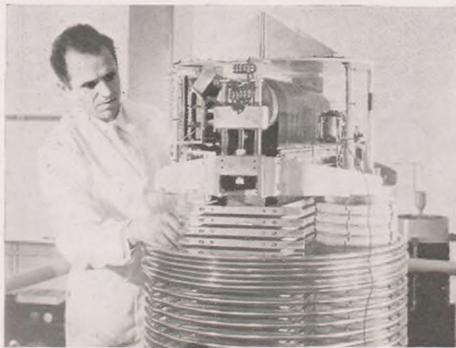
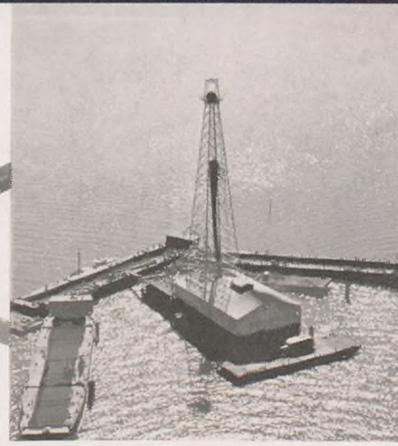
ACROSS DESERTS,
RIVERS AND MOUNTAINS
TO LOS ANGELES

SHELL NEWS

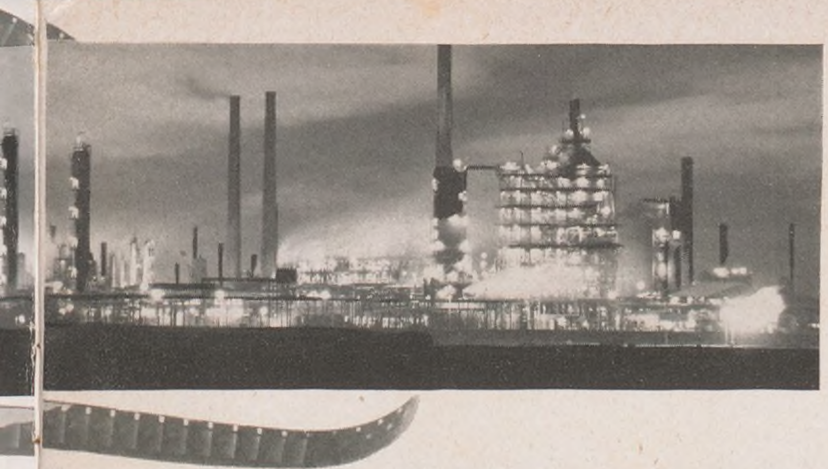
OCTOBER 1957





BOLDNESS PAYS OFF

THE statement above is from opening remarks made by H. S. M. Burns, President of Shell Oil Company, as he introduced the new Shell color movie, "Boldness Pays Off," which will be available early in October. Shell's boldness, Mr. Burns says, has no room for recklessness. "Our boldness means that we have the guts to take the risk of short-term losses, when we can



"The great quality of Shell people that has contributed to and been responsible for our past successes—and to which we can look confidently for our successes in the future—is the character of boldness."

see the possibility of our action leading to long-term progress. We are ready to take calculated risks on new products and new processes, and on new areas of potential oil production, where our research and exploration and judgement indicate that there is a better-than-even chance of contributing to our stability and growth. In other words, instead of chasing the 'fast buck,' we prefer to build for the future."

Several of these ventures are related in the film.

The first example took place in 1933 when Shell began commercial manufacture of iso-octane. The film notes that iso-octane was a laboratory curiosity then selling at $25 a gallon. Shell researchers saw a bright future for this colorless liquid as a key to better gasoline. After discovering a method of making it at much lower costs—

SHELL NEWS

VOL. 25—No. 10 **OCTOBER, 1957**

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

Employee Communications Department
New York, N. Y.

contents

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

ABOUT THE COVER

Carve a ditch out of sand and rock. Take 16-inch steel pipe and weld it together, 40 feet at a time, beneath a boiling sun. Wrap the pipe in layers of protective covering. Lay it in the ditch and cover it up. Repeat the operation over and over again until the pipe stretches 600 miles underground. This is the story of the Four Corners Pipe Line.

The cover picture, by F. F. Adrian, Photographer, Houston Exploration and Production Area, shows a coating-and-wrapping machine putting the final touches on the welded pipe before it is lowered into the ditch. An article about construction of the new line from the Four Corners area into booming Southern California starts on page 18.

though without a customer in sight—Shell constructed units at the Martinez, Wood River and Houston Refineries to produce iso-octane for use in gasoline.

Iso-octane led to the development of 100-octane gasoline, which powered World War II aircraft. Because of this experience, Shell scientists were asked to help solve the problem of spark plug fouling in Air Force B-36 bombers.

They came up with TCP*, a gasoline additive recognized as the greatest advance in gasoline quality in more than 30 years. TCP proved highly successful, both in Shell aviation and automotive fuels. Today it is more important than ever in meeting the demands of automotive engines with higher compression ratios.

The film also cites Shell's exploration and production program as an example of what Mr. Burns calls Shell's willingness to take a calculated risk.

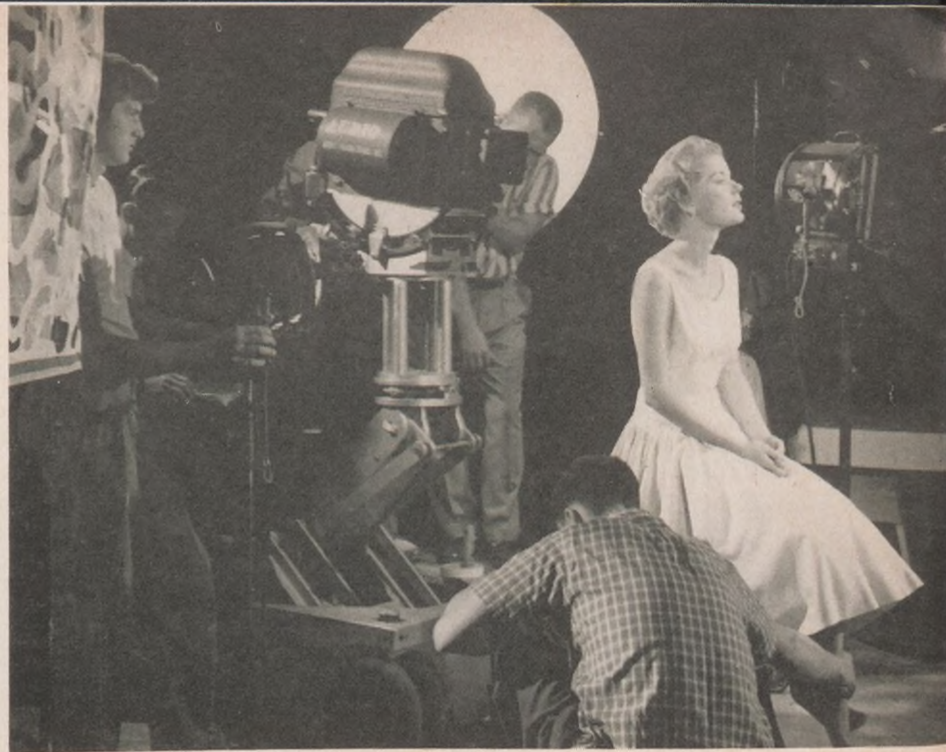
In a series of scenes showing exploration and production work, the narrator says:

"The search for oil is *expensive*—so expensive that it takes 67 cents of every capital dollar we spend. And it is difficult because the easiest-to-find fields have long since been discovered.

"Today we must look for oil where it is harder to find and harder to produce after it is found. All told, we have paid more than 55 million dollars for leases in the offshore waters of the Gulf of Mexico."

The scene switches to Operation Neptune off the coast of Texas:

"Our aggressive exploration program has not always been successful. In the offshore waters of Texas—where we have considerable acreage under lease and where we drilled farther offshore than had ever been done before—we got two dry holes at a cost of almost $2 million. To date, no one has found oil in the offshore waters of Texas, but we are now the second largest producer in the offshore waters of Louisiana."



The camera crew sets up a scene that tells about Shell's manufacture of hydrogen peroxide, which besides hair tinting, has many industrial uses.

Shell was the third largest producer of crude oil, in the United States in 1956, and the film shows scenes of Shell successes in the Four Corners region. There, after years of work, the outlook is promising. Also shown is Shell activity in several other oil-producing areas on the North American continent: Williston Basin, western Canada and California's offshore waters.

"We do not know what the results of our search for oil in these areas will be," the narrator says, "but we do know what our exploration and production people have accomplished in the past."

The film's third major example of the outlook of Shell people starts in the late 1920's when the Company started a research program to find ways to use refinery gases. This program led to the birth of two Shell companies: Shell Development Company, to discover new and improved petroleum products through research; and Shell Chemical Corporation, to manufacture and market new chemical products.

Two products of research in refinery gases are glycerine (a versatile chemical) and butadiene (a major ingredient of synthetic rubber). The film notes that when Shell scientists discovered methods for making butadiene in 1934, and glycerine in 1937, neither product seemed a profitable venture. But when shortages developed later, Shell was able to produce both. Today Shell is the largest United States supplier of synthetic glycerine and the largest West Coast supplier of general purpose synthetic rubber.

"Glycerine and butadiene are but two of the many products which were developed from our research on the utilization of refinery gases," the film says. It tells how Shell scientists then discovered a way to make hydrogen peroxide from petroleum, a method for producing acrolein—a promising new industrial chemical—and a revolutionary way to make glycerine from hydrogen peroxide and acrolein.

These examples of boldness by Shell people are repeated in every department of the Company, Mr. Burns says near the close of the film.

*Trademark Shell Oil Company

He concludes: "To my mind, the pursuit of this policy is essential if we are to fulfill our obligations: Our obligations to the public and the society in which we live and to our stockholders who risk their money to maintain us in business. And, most importantly, our obligations to ourselves and new generations of Shell employees—by building progress and security for the future."

"BOLDNESS" AND BOW TIES

What did oil scientists wear at work in the 1930's?

That was one of the questions that had to be answered before the cameras could roll on a laboratory scene for "Boldness Pays Off," produced by the Head Office Visual Aids Division in collaboration with the Employee Communications Department.

Finding the answer was one of the jobs of E. J. Greene, Jr., of the Visual Aids Division, who directed the picture. He learned that the scientists wore black bow ties then, for one thing. He also had to dig up some brown lab smocks for the scene to replace the white ones used now. In addition, wooden pencils replaced ballpoint pens; calendars and modern safety glasses were set aside.

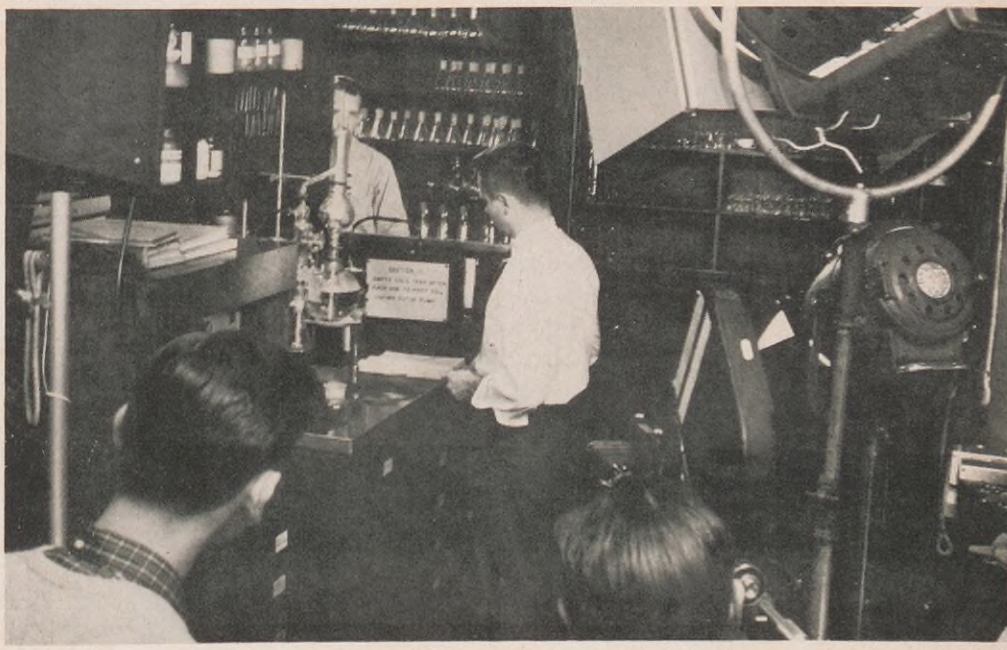
In all, the camera crew shot 9,000 feet of color film. Editing cut the length to 934 feet which runs 27½ minutes, with music and narration.

The film crew traveled 17,000 miles in 85 days. Their cast was made up of Shell employees in refineries, chemical plants, laboratories, oil fields and offshore rigs.

The film-makers went from New York to the West Coast, from snow-covered slopes of the Rockies to desert oil fields in New Mexico and Arizona. They filmed every day the sun shone. When it rained for three days in a row at Billings, Mont., what did they do? They went to the movies!

E. J. Greene, Jr., of the Head Office Visual Aids Division, left, and R. L. Danforth, Chemist, at Shell Chemical's Torrance Plant prepare to shoot a scene.

The crew focuses on a scene at the Emeryville Research Center featuring A. E. Handlos, Chemist, left, and E. S. Spicer, Laboratory Assistant.



Later, they had to show a little "boldness" of their own. When they went out into the Gulf of Mexico to film a scene on an offshore rig, their boat was turned back because the swells were too high for them to board the rig. They tried again the next day and made it ●

SHELL PEOPLE

SHELL OIL COMPANY EXPLORATION AND PRODUCTION ORGANIZATION

W. R. LUND

W. R. LUND has been appointed Production Manager for the New Orleans Exploration and Production Area to succeed J. W. Pittman, who is on temporary leave of absence as a result of injuries suffered in an automobile accident. Mr. Lund, who received a Bachelor's degree in petroleum engineering from the University of Minnesota, joined Shell Oil Company in 1934 at Tulsa. Following engineering assignments in Oklahoma, Kansas and Texas, he was named Production Manager of the Tulsa Area's Kansas Division in 1945 and of the Oklahoma Division in 1949. He was appointed Production Superintendent of the New Orleans Area in 1953 after completing a two-year assignment to the B.P.M., and in January, 1956 was named Production Manager of the Calgary Exploration and Production Area.

J. W. ROCHE

J. W. ROCHE has been appointed Production Manager of the Calgary Exploration and Production Area, succeeding Mr. Lund. Mr. Roche, who holds a B.S. degree in petroleum engineering from the University of Pittsburgh, joined Shell Oil Company in 1934 at Tulsa. He served at several Oklahoma and Kansas locations before being named in 1941 as District Exploitation Engineer for the Kansas Production Division. He then served as Senior Exploitation Engineer for the Kansas Division and for the North Texas Division, and in 1948 became Division Production Manager of the North Texas Division; in 1953 he was named to the same duty in the Denver Division of the Denver Area. At the beginning of 1955 he was appointed Area Production Superintendent of the Denver Area.

SHELL DEVELOPMENT COMPANY

K. E. MARPLE

K. E. MARPLE, formerly Manager of the Denver Agricultural Research Laboratory, has been appointed Director of Shell Development Company's Agricultural Research Division, whose consolidation into one group at Modesto, Calif., will be completed within the next few months. Mr. Marple, who received B.S. and Ph.D. degrees from Iowa State University, joined Shell Development in 1935 as a Research Chemist at the Emeryville Research Center. He became Assistant Head of the Organic Chemistry Department in 1948 and Acting Head of that department in 1951. He was appointed Manager of the Agricultural Research Division's Denver Research Laboratory in March, 1953.

T. R. HANSBERRY

T. R. HANSBERRY, formerly Manager of the Modesto Agricultural Research Laboratory, has been appointed Assistant Director of Shell Development's Agricultural Research Division. Mr. Hansberry, who received B.S. and M.S. degrees from the University of Washington at Seattle, and a Ph.D. degree from Iowa State University, will be in direct charge of the biological sciences group.

in the news

SHELL DEVELOPMENT COMPANY *(continued)*

Both the Research and Development Divisions of Shell Development Company's Emeryville Research Center have grown considerably in recent years. As a more appropriate description of the duties and responsibilities involved, the title "Director" has been given to those formerly holding the title "Associate Director." Those affected by the change are:

D. P. STEVENSON	Director-Fundamental Research
S. A. BALLARD	Director-Chemical Research
B. S. GREENSFELDER	Director-Oil Research
B. M. BEINS	Director-Engineering Development
M. SOUDERS, JR.	Director-Oil Development
C. L. RAYMOND	Director-Chemical Development


D. P. STEVENSON


S. A. BALLARD


B. S. GREENSFELDER


B. M. BEINS


M. SOUDERS, JR.


C. L. RAYMOND

Shell Development Company's Development Division at the Emeryville Research Center was reorganized August 15 to segregate oil and chemical process developments. This will simplify liaison with both Shell Oil Company and Shell Chemical Corporation. The reorganization included naming three men to head new departments.


EDWARD GELUS

EDWARD GELUS has been appointed Department Head-Oil Reaction Process. Mr. Gelus, who received his B.S. degree in chemical engineering from the Massachusetts Institute of Technology, joined Shell Oil Company in 1936 as a Junior Research Chemist at the Houston Refinery. He became Chief Research Technologist at the refinery in 1948, and the following year joined Shell Development Company as Assistant Department Head of the Catalytic Refining Department at the Emeryville Research Center. In 1952 he became Assistant Department Head of the Process Development Department.

G. E. LIEDHOLM

G. E. LIEDHOLM has been appointed Department Head-Oil Process Engineering. Mr. Liedholm, who received his B.S. degree in chemistry from California Institute of Technology, joined Shell Oil Company as an Inspector at the Martinez Refinery in 1933. He became a Junior Research Engineer at the refinery in 1935, and the same year joined Shell Development Company in the Engineering Department with successive assignments at Wilmington, San Francisco and New York. In 1950 he was named Assistant Department Head of the Process Engineering Department at the Emeryville Research Center.

G. J. PIEROTTI

G. J. PIEROTTI has been appointed Department Head-Chemical Separation. Mr. Pierotti, who received his B.S. degree in chemistry from the University of California at Berkeley, joined Shell Development Company in 1937 as a Laboratory Assistant in the Research Department. He became a Chemist in the Physical Chemistry Department in 1941 and in 1952 was named a Supervisor in that department. In 1956 he was appointed Assistant Department Head of that department.

SHELL CHEMICAL CORPORATION

S. H. McALLISTER

S. H. McALLISTER has been appointed Manager, Agricultural Sales Division, Shell Chemical Corporation, at New York, succeeding F. W. Hatch, who will retire December 31. Mr. McAllister, who received A.B. and M.A. degrees in chemistry from Stanford University, joined Shell Development Company in 1930 as an Assistant Chemist at the Emeryville Research Center. He became a Research Chemist in 1934 and three years later was made Head of the Process Development Department. He was appointed an Associate Director of the Research Center in 1942. He was named Director of Shell Development's Agricultural Research Division at Denver in 1955.

A. W. FAIRBAIRN

A. W. FAIRBAIRN has been appointed Assistant Superintendent of Shell Chemical Corporation's Dominguez Plant. Mr. Fairbairn, who attended the University of California at Berkeley, joined Shell Development Company in 1931 as a Laboratory Helper at the Emeryville Research Center. He became a Research Chemist in 1938, Chemist in 1941 and an Assistant Department Head in 1944. Following a 1953 foreign assignment in Amsterdam, he joined Shell Chemical Corporation in 1954 as Assistant Superintendent of the Martinez Plant. In 1956 he moved to Shell Chemical's Head Office as a Section Leader in Manufacturing-Operations.

G. A. WHITE

G. A. WHITE has received an assignment as a Section Leader in Shell Chemical Corporation's Head Office Manufacturing-Operations. Mr. White, who received an A.B. degree in chemistry from the College of the Pacific and an M.A. degree in chemistry from Stanford University, joined Shell Chemical Corporation in 1937 as a Tester at the Shell Point Plant. He became a Chemist in 1938 and a Research Chemist in 1941, and was named Manager of the Hydrogen Department in 1944. Mr. White went to the Martinez Plant in 1947 as Manager of the "A" Department, and five years later was named Assistant Superintendent of the Dominguez Plant.

news and views

THEN AND NOW

In a recent issue of THE SHELL MAGAZINE, London, S. W. Duhig, who retired in 1950 as a Director and Vice President of Shell Oil Company, compared the old and the new in the oil industry. He concluded:

"Far from the 'horse-and-buggy days,' every family has now (thanks to gasoline) shortened its distances a hundredfold. Supplies, once hauled laboriously over dirt roads, are now sped to the site by diesel power.

The fellow who gauges the well production there (the Coalinga Field) is in direct touch with his Los Angeles office, and they with New York. His wife can do her shopping . . . miles away, and his school children are picked up by the centralized bus service.

"The difference between 'then' and 'now' is plain enough, and lies more than anywhere else in improved transportation. By land and sea and air, this is the Great Change."

IDEA OF PRODUCTIVITY

R. C. McCURDY

"Most people think of producing in mechanical terms as the act of making something; and if this is done with reasonable efficiency, many would label the activity productive.

You will note that under this elementary conception of it, the creation of a useless surplus, or an undesired product, would have to be deemed productive, provided the actual work was done ably.

"In the intensely competitive industrial world, there is no room for this loose and unpurposeful idea of productivity.

"We soon learn that the things we make are only means to an end, and that what we have really got to produce is the effective satisfaction of human needs and desires. We satisfy these, and deserve to be counted as productive when, and only when, an actual customer buys our stuff and uses it.

"The rest of the process is in the nature of an expensive preparatory exercise in which we can throw away a lot of manpower, material and money if we are wrong about what the customer will choose.

"Incidentally, I might remark here that the essential element in finding out what customers want and in guiding projections about what they probably will want in the future is actually to try to sell them something.

"So if people tell you that sales departments represent unproductive effort, do not believe it."

(From an address by R. C. McCurdy, President, Shell Chemical Corporation, before Shell Merit Fellowship recipients at Stanford University.)

KNOWLEDGE OF SCIENCE

H. GERSHINOWITZ

"I think that the place of science in our educational curriculum should be restored and that our citizens, not just our future mathematicians and scientists, but the citizens of our country, should be given enough training in the background necessary to understand science to enable them to appreciate what it has done in the past, what its significance is, and what its present contributions mean in terms of our life today.

"One does not simply teach literature or composition to people who are going to be authors. One does not teach the elements of music to people who are going to be composers only. One does not teach art appreciation or principles of art only to those who are going to be artists.

"Just as we try to provide our children with the necessary background which enables them to appreciate these fields of intellectual activity, so I think it is necessary to provide them with enough of the background and language of mathematics and science to permit them to appreciate and understand that part of our cultural heritage."

(From an address by H. Gershinowitz, President, Shell Development Company, before Shell Merit Fellowship recipients at Cornell University.)

Forty per cent of civilian blood transfusions are provided by the Red Cross, to which Shell contributes.

In Philanthropy,

Shell Joins its Employees as a

"Partner in Citizenship."

Oklahoma City is one of the more than 300 communities where Shell people live and work that benefit from Shell donations to Community Chests or United Funds.

PATTERN FOR GIVING

ANDREW CARNEGIE, the famed steelmaker who gave away millions, said this about philanthropy: "It's easy to give money away but to give it away intelligently takes as much business skill as earning the money in the first place."

Like any individual with a sense of civic responsibility, Shell aims to make its donations as intelligently as possible. But unlike most individuals, a national corporation has philanthropic responsibilities that are large and complex.

This year, Shell's donations are more than $1 million. They are made in communities where Shell people live and work. Shell considers itself a citizen—a corporate citizen—of those communities. Shell also accepts national philanthropic responsibilities, including contributions to colleges and universities.

Shell's giving is in three major groupings: 1) local charities, such as the Community Chests and United Funds and the Red Cross, 2) national welfare agencies, such as the American Heart Association, Incorporated, and the National League for Nursing, and 3) support to education through 43 institutions of higher education around the country and several national associations.

To give as constructively as possible, most of the donations are made by the Shell Companies Foundation, Incorporated. Set up in 1953, the Foundation carries out Shell's long-standing policy of contributing to philanthropies that promise to benefit large and diverse groups of Americans. The Foundation, with the employees of Shell Oil Company, Shell Chemical Corporation, Shell Pipe Line Corporation and those of Shell Development Company supports charitable, educational, religious and cultural causes.

The Foundation's activities reflect the relationship that has developed in the last few decades between the community and corporate business. Health, education, social and cultural welfare at one time were almost exclusively the concern of small fund-raising groups, of government, or of individuals giving away large private fortunes. Today, corporate business assists the individual citizen in fulfilling these civic responsibilities.

The Shell Foundation goes a step further by relating its responsibilities to those of Shell employees in their own communities. In this sense, the Foundation and Shell employees have become *"partners in citizenship."*

The Foundation carries out this idea in making contributions to multi-agency local charities like the Community Chests or United Funds in the more than 300 communities where Shell people live and work. The portion each Shell community should receive is determined by applying a yardstick—the Foundation's "pattern for giving." Donations to the Red Cross are allocated in the same way.

This year, for example, the Foundation's over-all donation to community funds is $285,000, and to the American Red Cross, $75,000.

The pattern for giving takes into consideration the number of Shell people in the community, the total population of the community, and the particular local charity need, as represented by the total amount of donations the local community campaign seeks to raise. These provide a basis or guide for deciding how much the Foundation should contribute as a fair share of its responsibility in the community—alongside the donations of individual Shell employees.

The Foundation's gifts are not intended to replace charitable donations by individual employees. Rather, they point up the Shell companies' belief that their interests are inseparable from those of the communities which Shell people call "home." The effectiveness of the pattern for giving concept is indicated in the fact that it now is widely used by others.

Besides the $360,000 budgeted this year to community funds and the Red Cross in the Foundation's general, non-educational category of gifts, $230,000 from the Foundation and Shell companies goes to groups—many of them national—judged on an individual basis. This year there are 26 national organizations, selected in a way similar to how a Shell employee might choose to support a charitable agency. These organizations include several national health groups which seek better health for all citizens, such as the American Cancer Society, Incorporated, and the National Association for Mental Health. The Foundation also gives to national religious groups because it believes physical well being alone does not make a healthy American community.

Sister Mary Casimir Maguire, Camden (N. J.) Catholic High School teacher, attended Cornell seminar for science teachers sponsored by Shell.

Science teachers at Shell-sponsored Stanford seminar visited the Emeryville Research Center, where Chemist C. D. Wagner (right) explained the 3,000,000-volt Van de Graaff electron accelerator.

PATTERN FOR GIVING

Shell's third major sector of philanthropy is support of education, for which this year the Foundation and Shell companies have a budget of more than $500,000—one of the best in industry. This support of education and broad basic research is part of the change during the last quarter-century in relations between private business and society in general. As in the other fields of philanthropy, the corporate citizen has recognized a responsibility to offer financial assistance to education, particularly that represented by privately-supported colleges and universities.

The national need for aid to education has been emphasized recently by the surge in college enrollments and the national shortage of science graduates and teachers. Shell's programs in the educational field aim to help solve some of these problems.

The Foundation's academic support program is carried out in these ways: 1) regular school-year fellowships, 2) research grants, 3) fellowships for high school science and mathematics teachers, 4) donations to leading national education associations.

Under the regular school-year fellowships, 52 outstanding graduate students at 38 universities have been awarded financial assistance totaling $134,000 this year to help them obtain advanced degrees. The students are working in chemistry, physics, mathematics, geophysics, geology, business administration, and in chemical, mechanical, petroleum and civil engineering.

These fields of study are ones in which Shell is particularly interested. Contributions to the schools not only help aid higher education but also advance knowledge with which Shell, the oil industry and industry in general must be concerned. If the American economy is to continue to expand, technological advances are necessary.

Fellowships are awarded and administered by the schools receiving them and carry no employment obligations. The following financial provisions are made: $1,500 for the personal use of the student, plus tuition and fees; also an additional expense grant of up to $1,000 to the school itself in connection with each fellowship. The expense grant to the school is made because the facilities used by the student outside his immediate work also make important contributions to his education.

A similar approach is taken in the Foundation's program of research grants, with a budget this year of $150,000, which goes to 20 departments at 15 schools. The $7,500 grants are used this way: $5,000 to help expand research in the department, plus $2,500 to the school to help meet general expenses.

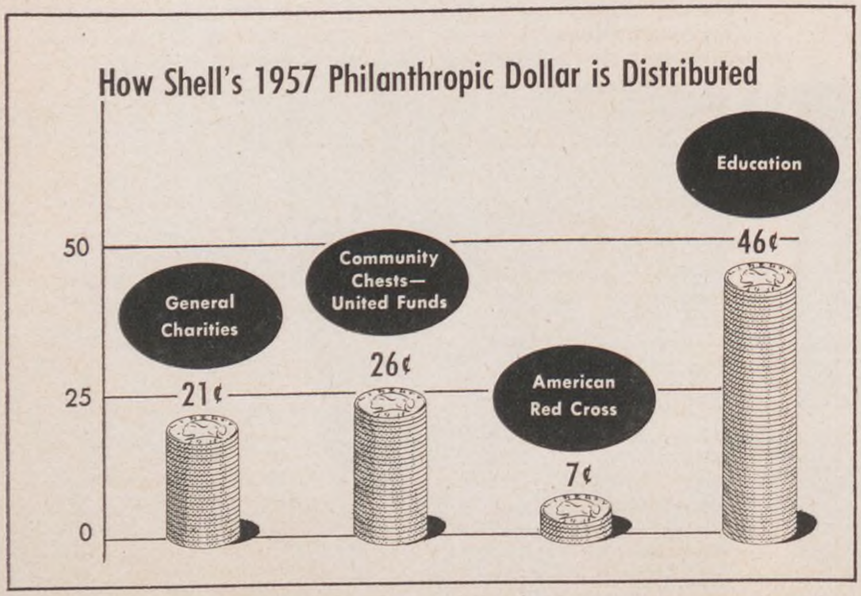
How are the schools chosen for fellowships and research grants?

The origin of the current Shell support-of-education program goes back to the 1940's with Shell managements viewing the problems of education as of national concern and being among the first to sense the growing needs of colleges and universities. A committee was formed to study how Shell could best serve in helping solve some of the problems then developing.

As a first step, a number of Shell Fellowships were established. The schools selected to offer the fellowships were chosen from among those then making the strongest contributions in supplying well-trained people in fields of critical importance to the nation and of interest to Shell. Later, Shell support was broadened through the establishment of Shell research grants at schools seeking to add to the nation's store of fundamental knowledge by providing good opportunities for broad basic research in many of the fields related to the Shell Fellowships.

As far as educational support is concerned, Shell has recognized the

Shell donations this year total more than $1,000,000. Shell relates its responsibilities to those of Shell employees in their own communities. In this sense, Shell and its employees have become "partners in citizenship."



value of continuity. A school comes to depend on its sources of support. Academic programs, particularly those for research and for fellowships, are normally long lived. Changes in the placement of Shell fellowships and research grants are made ony after careful study and consideration of the merit of each situation. Very few changes have occurred.

The third section of the academic aid program is the Shell Merit Fellowships for High School Science and Mathematics Teachers (see SHELL NEWS, August, 1957). The Merit Fellowships, this year budgeted at $150,000, were started in 1956. Their primary objective is to give fresh inspiration to high school science teachers who in turn may attract more good students to careers in science and engineering. The program also aims to stimulate recognition of the teachers in their communities.

In addition to the regular school-year fellowships, the research grants and the Merit Fellowships, the Foundation also contributes to such educational organizations as the National Fund for Medical Education and the United Negro College Fund.

The Foundation's experience has indicated the advantages of its type of philanthropic organization. Of major importance is the fact that funds can be accumulated in years of good business so that donations can be continued in less profitable years—when the needs of charitable agencies may indeed be more acute. Also, in line with Shell's preference to contribute to community-wide projects, Foundation screening of contribution requests gives assurance that groups and organizations Shell wants to support are not neglected. And, as the success of the Merit Fellowship Program shows, the Foundation provides a favorable climate for original and creative giving ●

FELLOWSHIPS

California Institute of Technology
- Chemistry
- Mechanical Engineering

University of California (Berkeley)
- Chemistry
- Mechanical Engineering

University of California (Los Angeles)
- Chemistry
- Geophysics
- Geology
- Mechanical Engineering

Carnegie Institute of Technology
- Chemical Engineering

University of Chicago
- Chemistry
- Physics

Colorado School of Mines
- Geology or Geophysics

University of Colorado
- Chemical Engineering

Columbia University
- Geophysics

Cornell University—New York State School of Agriculture
- Plant Science

University of Delaware
- Chemical Engineering

Duke University
- Physics

Georgia Institute of Technology
- Chemical Engineering
- Civil Engineering

Harvard University
- Physics
- Chemistry

Illinois Institute of Technology
- Chemical Engineering

University of Illinois
- Chemical Engineering
- Geology

University of Indiana
- Geophysics

Iowa State College
- Chemistry

University of Kansas
- Geology

University of Michigan
- Chemical Engineering
- Mechanical Engineering

University of Minnesota
- Chemistry
- Geology

University of Nebraska
- Geology

Northwestern University
- Geology

Ohio State University
- Chemical Engineering

University of Oklahoma
- Petroleum Production Engineering

Oregon State College
- Mechanical Engineering

The Pennsylvania State University
- Chemical Engineering
- Chemistry

Purdue University
- Chemical Engineering
- Mechanical Engineering

Rice Institute
- Physics

Stanford University
- Geology

Texas A&M
- Petroleum Production or Mechanical Engineering

University of Texas
- Petroleum Production Engineering
- Geology

Washington University (St. Louis)
- Physics

Wharton School of Finance and Commerce, University of Pennsylvania
- Business Administration

University of Washington (Seattle)
- Chemistry

Louisiana State University
- Geology or Petroleum Engineering

Massachusetts Institute of Technology
- Mechanical Engineering
- Physics

University of Wisconsin
- Chemical Engineering
- Chemistry

Yale University
- Geology

RESEARCH GRANTS

California Institute of Technology
- Chemical Engineering
- Physics

Carnegie Institute of Technology
- Chemical Engineering

University of Chicago
- Chemistry

Cornell University
- Chemistry

Harvard University
- Chemistry
- Physics

Massachusetts Institute of Technology
- Mechanical Engineering
- Physics
- Metallurgy-Corrosion

New York University
- Mathematics

Northwestern University
- Chemistry

Notre Dame University
- Chemistry

Princeton University
- Chemistry

Rice Institute
- Mechanical Engineering

University of Rochester
- Chemistry

St. Louis University
- Geophysical Engineering

Stanford University
- Geology
- Engineering Mechanics

Yale University
- Geology

Oil Progress Week Celebrates the Oil Industry's 98th Year of Progress. Here Are Some Facts and Figures Everyone Should Know About

What Oil Progress Means

ONE of the many sea stories from World War II concerned a ship caught in the middle of an Atlantic storm. During the height of the storm, the ship sprang a leak and began to sink. As the sailors rushed below to man the pumps, the bos'n noticed one old salt still sleeping in his bunk.

"Come on sailor, wake up," the bos'n roared. "The ship is sinking."

"So what," the old salt answered drowsily. "We don't own it, do we?"

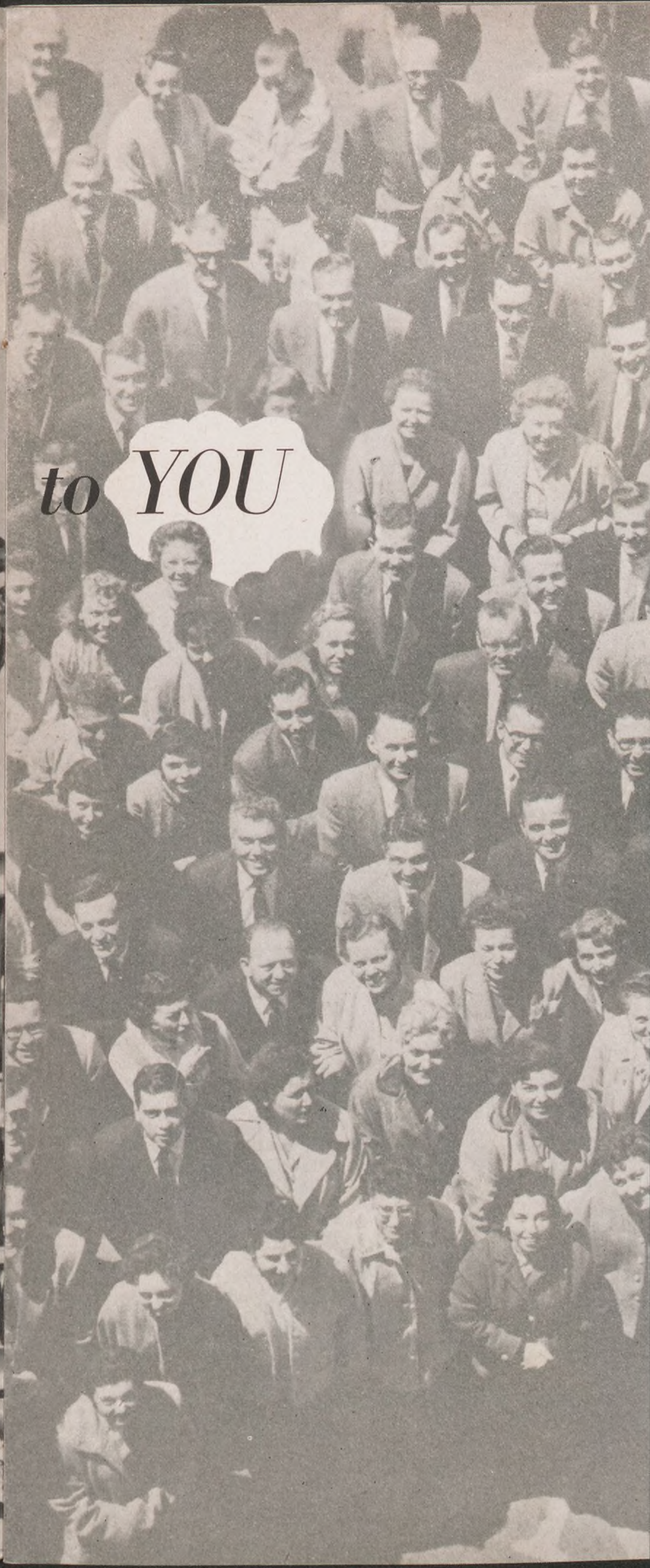
Few people have such an outright negative attitude toward their work. On the contrary, more and more people today are recognizing that they have an important stake in their company. This feeling of identification is particularly strong, perhaps, in the oil industry, where every year employees have the opportunity to take part in Oil Progress Week and help their industry report to the nation.

This year Oil Progress Week is being celebrated from October 13 through October 19. It marks the 98th year of progress for the oil industry. This year's Oil Progress Week also finds the industry taking dead aim on the false information recently circulated about certain aspects of the oil business. Much of this misinformation is centered around the price of crude oil and of gasoline.

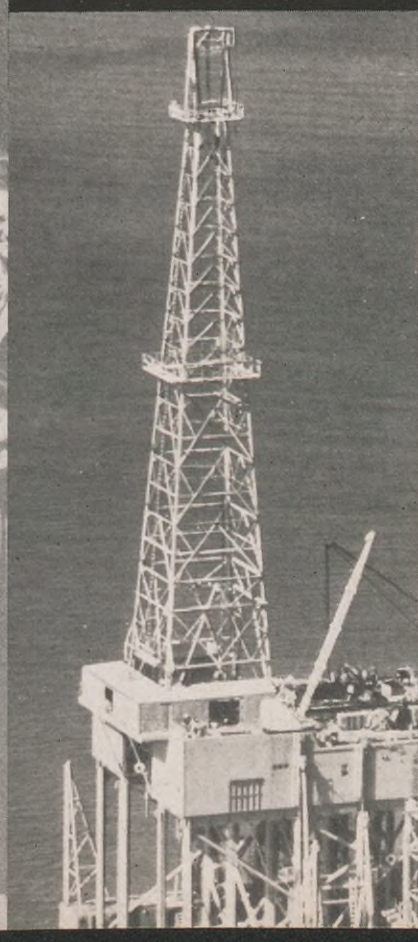
Last January, when rising costs forced an increase in crude oil prices, there was considerable criticism in the press. Much of this criticism, unfortunately, was based upon hearsay information and outright prejudice. A considerable amount of misleading information also has been circulated regarding the price of gasoline.

Oil Progress Week, sponsored by the American Petroleum Institute, provides a real opportunity this year for oil men and oil women not only to tell the story of their industry but also to present the facts on these two issues. On the matter of crude oil prices, for example, the oil industry has done a better-than-average job of keeping prices down during an inflationary period. Since 1948, according to A.P.I. figures, drilling and production costs have gone up approximately 60 per cent, and the cost of oil exploration has tripled. Over this same period, the cost of machinery has spiraled 42 per cent, metal and metal products are up 46 per cent and the price of iron and steel has risen

to YOU



Within one short century, the oil industry has evolved from wooden derricks (above) to million—dollar offshore drilling rigs (below).



58 per cent. Despite the increased costs of these essential materials, however, crude oil prices have gone up only 19.5 per cent since 1948.

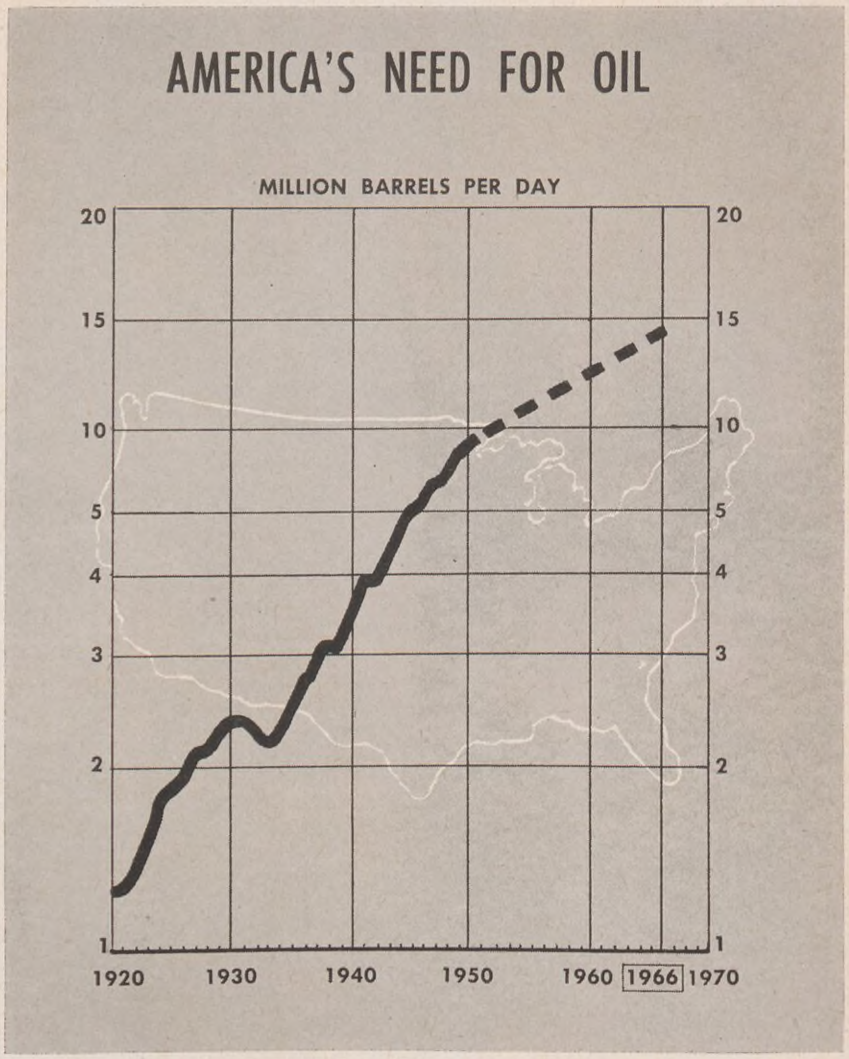
The price of gasoline has gone up even less than the price of crude oil. Exclusive of taxes, gasoline has gone only 11.5 per cent above the 1948-1949 average. During this same period direct taxes on gasoline, on the national average, have soared 39 per cent.

Gasoline still costs less than most items in the family budget. The average U. S. employee earns enough in an hour to buy nine gallons of gasoline, compared with seven gallons in 1948. In 1920 one dollar would buy approximately three gallons of gasoline. Today's gasoline dollar (excluding taxes) will buy nearly five gallons of greatly improved fuel.

Another plus factor to consider is that constant refinery research and development has made gasoline better than ever. Last year, for example, the industry spent more than $292 million to improve the quality of gasoline. Since 1946 the octane rating has been boosted by more than 10 numbers, and new premium gasolines—such as Super Shell with TCP*—have been developed to meet the exacting demands of the modern automotive engine.

Progress and service are an old story with the oil industry. Each year the industry spends more than $1 billion to improve its products and discover new ones. During the past 10 years the oil industry has invested more than $40 billion for capital expansion and improvements. This huge investment explains why petroleum has been a pacesetter in America's progress and has been able to provide improved products at competitively low prices. It also explains, in part, why the oil industry employs more than 1½ million people who receive

*Trademark Shell Oil Company



In 1956, America used 8.8 million barrels of oil daily. By 1966, according to a Chase Manhattan Bank study, America will need 14.3 million barrels a day.

the highest wages and benefits in all industry.

The over-all growth of the petroleum industry has been impressive. In less than 100 years the oil industry in America has grown to one of the largest industries in the nation. Since 1946, the number of wells drilled in the United States has doubled. Even greater progress lies ahead.

A recent study prepared by the Petroleum Department of the Chase Manhattan Bank in New York indicates that the petroleum industry can expect these developments in the next decade:

1. The population of the United States will rise from 168 million in 1956 to 197 million by 1966.
2. The nation's economy will require 45 per cent more energy by 1966, than it does today. Petroleum will have to supply about half the over-all energy needs.
3. The demand for oil will increase

Photo of early refinery unit, left, contrasts with up-to-date catalytic unit. Crude oil today is transformed into more than 2,300 useful products.

an average of five per cent each year. In 1966 America will need 14.3 million barrels of oil every 24 hours.

4. To meet this demand, the U. S. oil industry will have to boost production from 7.2 million barrels a day in 1956 to 9.5 million in 1966. This means the industry must discover approximately 3.6 billion barrels of oil per year.

During the next 10 years, the Chase Manhattan study shows, the United States will continue to be the greatest petroleum-consuming region in the world. In 1956 this nation alone consumed 56 per cent of all the petroleum produced in the free world. And 10 years from now—despite rapidly increasing oil consumption abroad—the United States still is expected to consume at least half this supply. The report goes on to state:

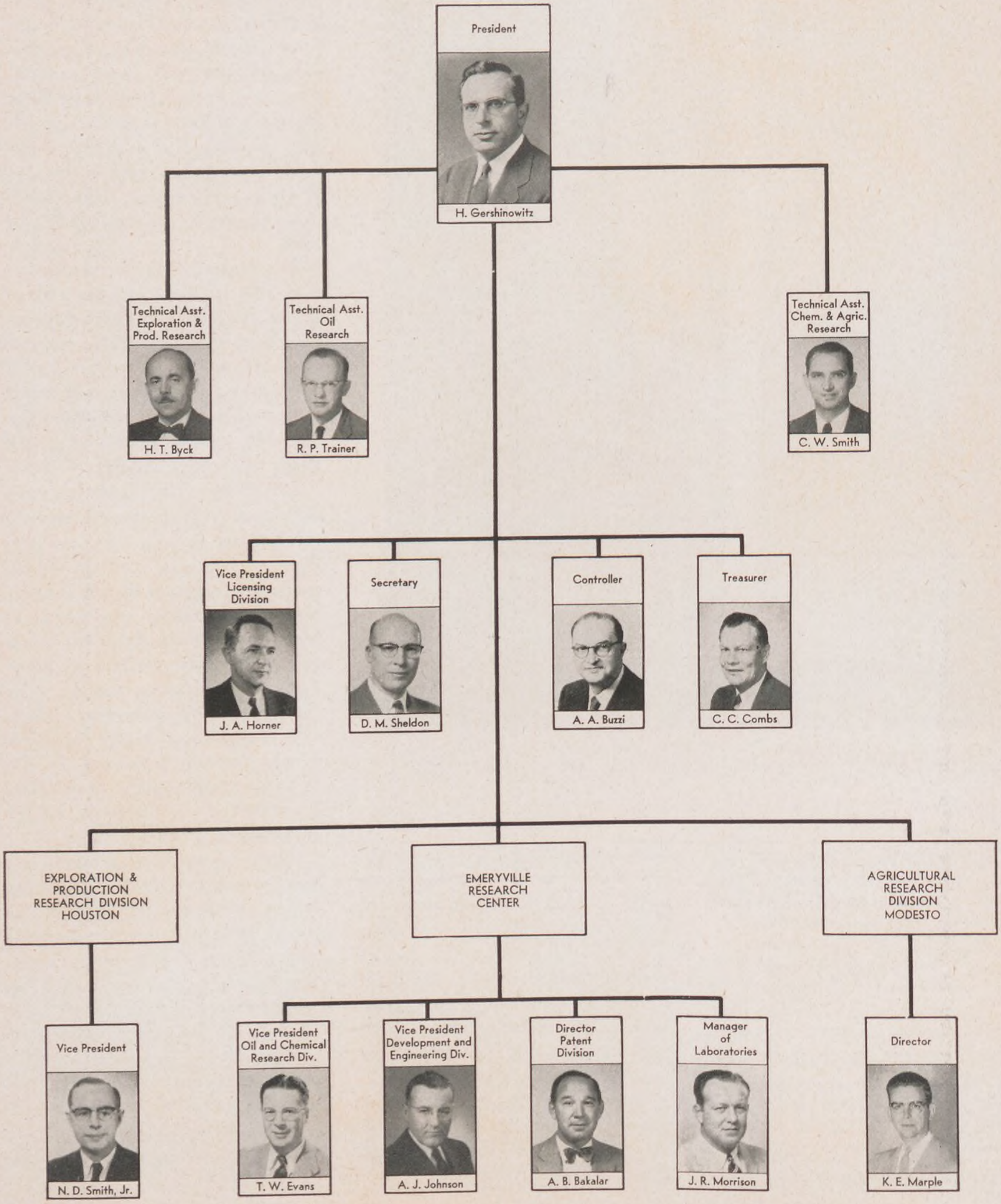
"Based upon the demand outlook as we see it, cumulative consumption of domestic crude oil in the next decade should reach a minimum of 38 billion barrels. Gross additions to reserves, therefore, would add up to 57 billion barrels. This means the industry should find 4.5 billion this year and gradually boost our discovery rate up to 7.1 billion by 1966. Based upon today's drilling experience, a total of 1.2 million wells would have to be drilled in the next 10 years, ranging from about 86,000 this year up to around 165,000 in 1966."

This huge increase in production work will, of course, require a lot of capital. According to studies made by the Chase Manhattan Bank, the cost of oil expansion in America will total an estimated $80 billion in the next 10 years. The industry expects to raise about 80 per cent of this money by itself, and borrow the rest.

Raising the money depends a great deal upon whether the oil industry can continue to show a fair profit in the face of rising exploration and production costs. If the oil industry became hampered by restrictive legislation and couldn't offer a fair return to investors, the problem of future financing would become more acute. The cost of this expansion, incidentally, in relation to the 1,650,000 people currently employed by the industry, would amount to a further investment of approximately $48,500 for each job.

The ever-growing demand for petroleum outlined by the Chase Manhattan study—and the expansion of the oil industry to meet the demand—means greater security and more opportunities for Shell people. You can make an extra contribution to the industry's development by stating the facts whenever you hear misinformation about the industry and by telling the industry's story to your friends and neighbors — throughout the year as well as during Oil Progress Week ●

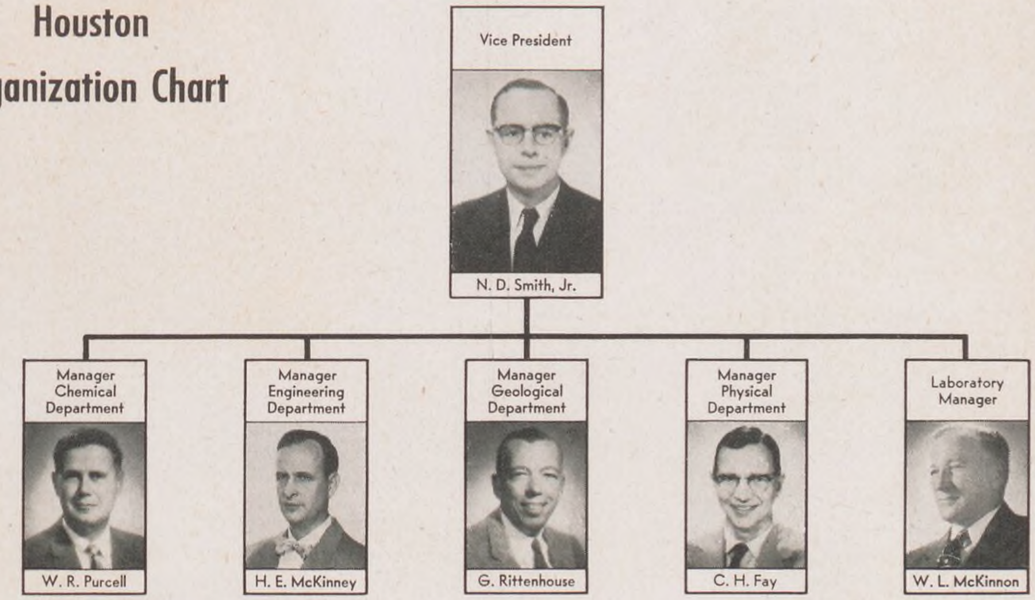
Shell Development Company Organization Chart



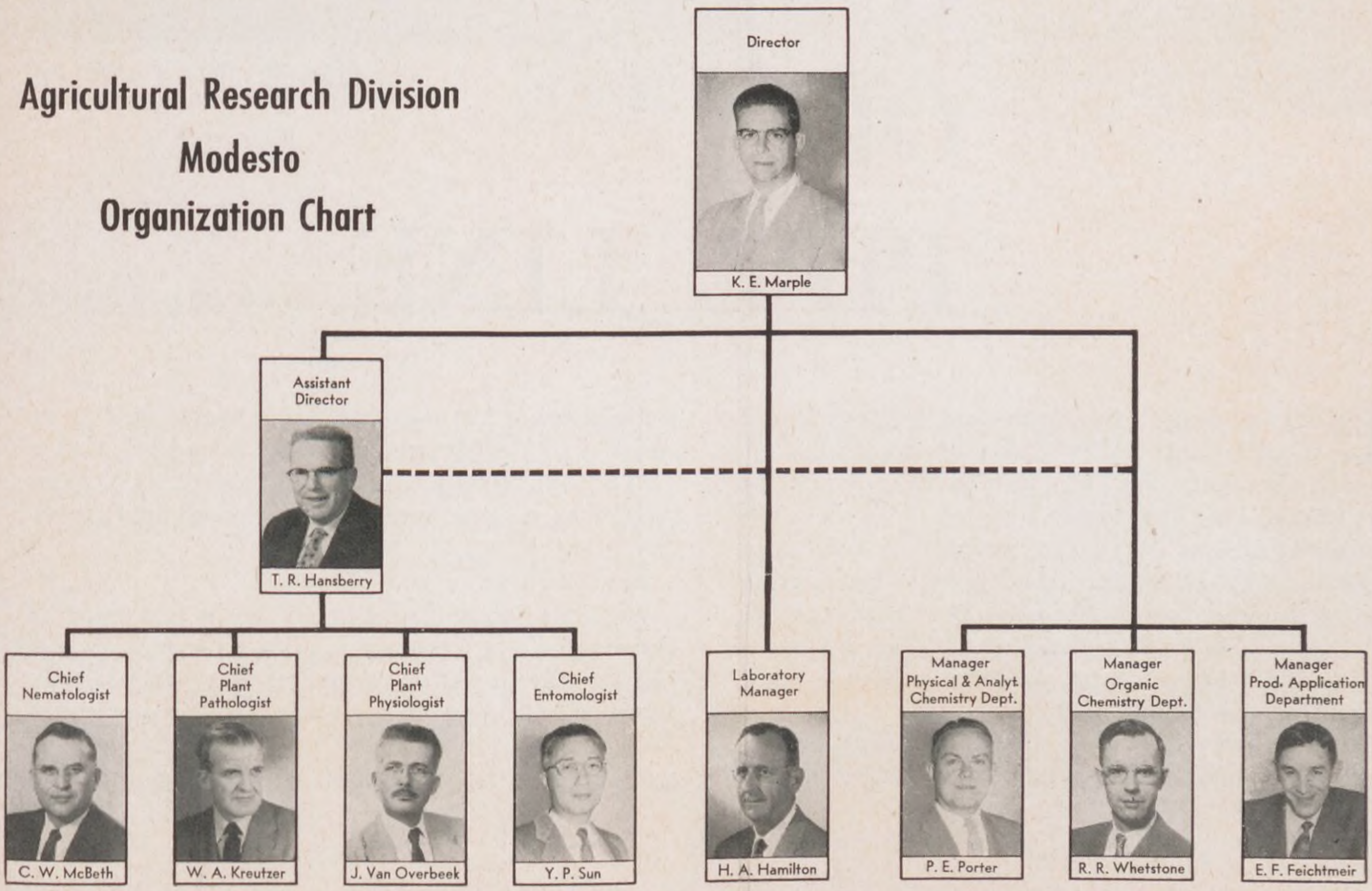
The fifth in a series of organization charts

October—1957

Exploration and Production Research Division
Houston
Organization Chart



Agricultural Research Division
Modesto
Organization Chart



BIRTH OF A PIPE LINE

After the ditch is dug, the steel pipe is strung alongside, a 40-foot

The Four Corners Pipe

DRAW a straight line from Aneth, Utah, to Los Angeles, Calif., and you'll find the distance is close to 525 miles. Just a day's trip, perhaps, for a car cruising 50 miles an hour over modern highways; a two-hour trip or less by airplane. Not much of a distance, this 525 miles, unless you happen to be working on a pipe line grinding across the desert floor in 120-degree heat. Then each mile becomes almost a minor victory and instead of cruising along at 50 miles an hour, you're more likely to settle for 50 miles a month.

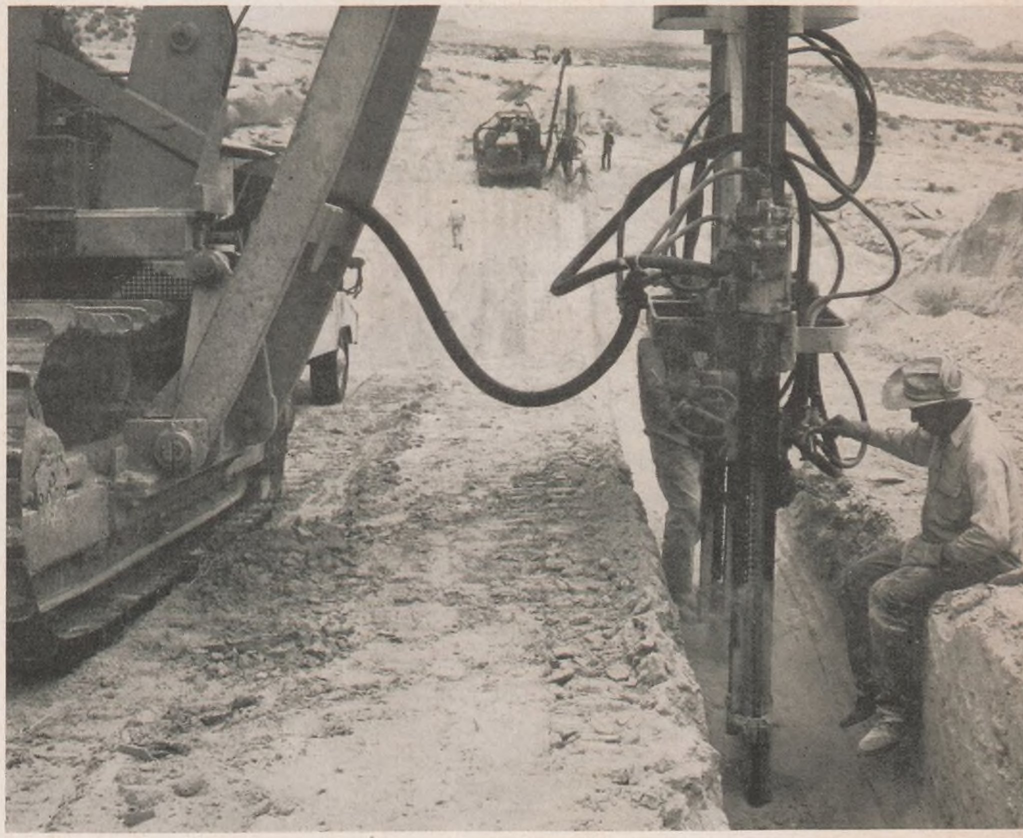
This, in many respects, is what is happening with the Four Corners Pipe Line. Before the $50 million project is completed, it will cross three major rivers; climb to an elevation of 6,700 feet and drop back to sea level; blast a path through 200 miles of solid rock; and tip-toe 45 miles through the metropolitan area of America's third largest city, Los Angeles.

Estimated time of trip—10 months.

The Four Corners Pipe Line will be the first crude oil line ever built in California drawing oil from fields outside the state. It will connect refineries in Southern California with the new oil fields straddling the borders of Utah, Colorado, Arizona and New Mexico. The new line will be 750 miles long, including 150 miles of feeder

joint at a time. Next step is to lay the pipe on skids and weld joints together.

Besides contending with the boiling sun, rivers and mountains, pipe line crews also must blast a path through miles of solid rock. Below, a multiple pneumatic drill is punching holes for dynamite charges in southeastern corner of Utah.



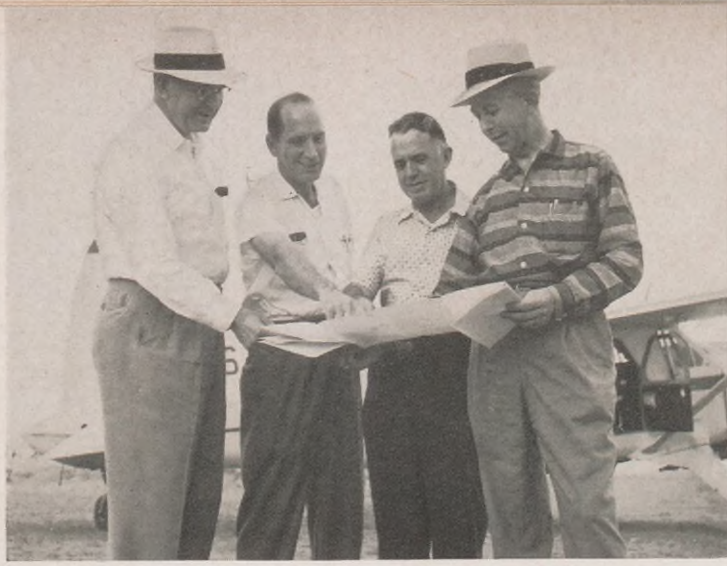
Line Grinds its Way Across 600 Miles of Rugged County to California

lines. About 750,000 barrels of oil will have to be pumped into the line from the Four Corners region before a single drop will arrive in Los Angeles. Initial capacity will be 70,000 barrels per day. Potential capacity—once all the pumping stations are built—is about 170,000 barrels per day.

Shell Pipe Line Corporation, as agent for the Four Corners Pipe Line Company, is supervising construction which is being done by contractors. The line is owned by six oil companies, including Shell Oil Company, which has 25-per-cent ownership.

The decision to build the line was made only after long study. Before a pipe line is built, there must be enough proved reserves of oil to justify the cost and a ready market. Reserves at Four Corners now are estimated at more than 250 million barrels. This figure may go as high as 500 million in the future. The Pacific Coast market, 400 miles closer to Four Corners than the Midwest, consumed about 70 million more barrels of oil in 1956 than it produced. Because of the West Coast's expanding economy, the demand for crude oil is expected to increase in the years to come.

Construction of the new line raises several unusual problems. One is that about 285 miles of the trunk and



Checking a map during a visit to Arizona are, left to right, D. B. Hutchinson, Pipe Line Construction Superintendent; H. C. Stevens, Resident Engineer; Joe T. Dickerson, President, Shell Pipe Line Corporation and J. K. Alfred, Field Manager of Construction.

H. L. Payne, Shell Pipe Line Chief Inspector, leads a party of contract surveyors along right-of-way near Cameron. Surveyors needed Federal Government's permission to enter Indian reservations.

feeder lines cross Indian lands rich in buried archaeological treasures. To help preserve them, Shell Pipe Line Corporation works closely with the U. S. Department of the Interior. Under the supervision of the National Park Service, two archaeologists follow the construction. The archaeologists already have found numerous ruins along the right-of-way; evidence, perhaps, of an ancient civilization.

Along with the unusual setting, the pipe line involves a considerable number of construction headaches. J. K. Alfred, Field Manager of Construction, points out that because of the rugged terrain the line is expected to have an unusually large number of bends. And since much of it winds through arid desert, some construction had to be delayed until the cool fall. Even so, workers must contend with 120-degree temperatures. All Shell inspectors, as a matter of routine, carry survival kits in their cars and jeeps. The kit includes a five-gallon can of drinking water, first aid kit, tire pump, food and sleeping bags.

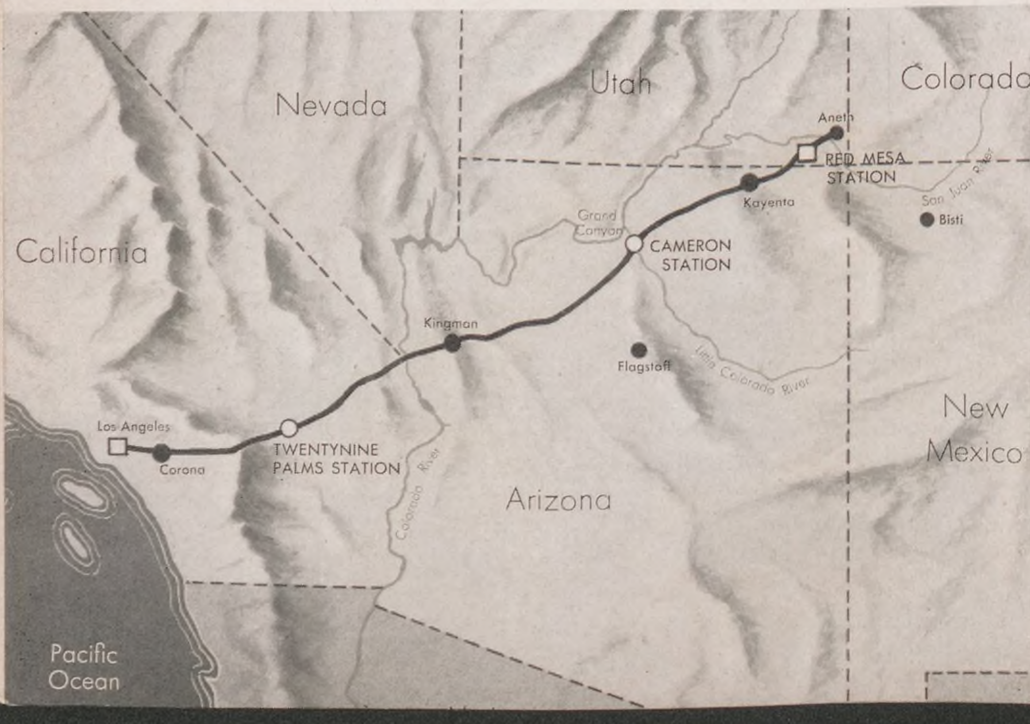
Men working on the line also have to worry about rattlesnakes. It seems it even gets too hot for the reptiles. To cool off, the rattlers crawl into the pipe's shadow. When it becomes cooler, usually at night, the snakes come out!

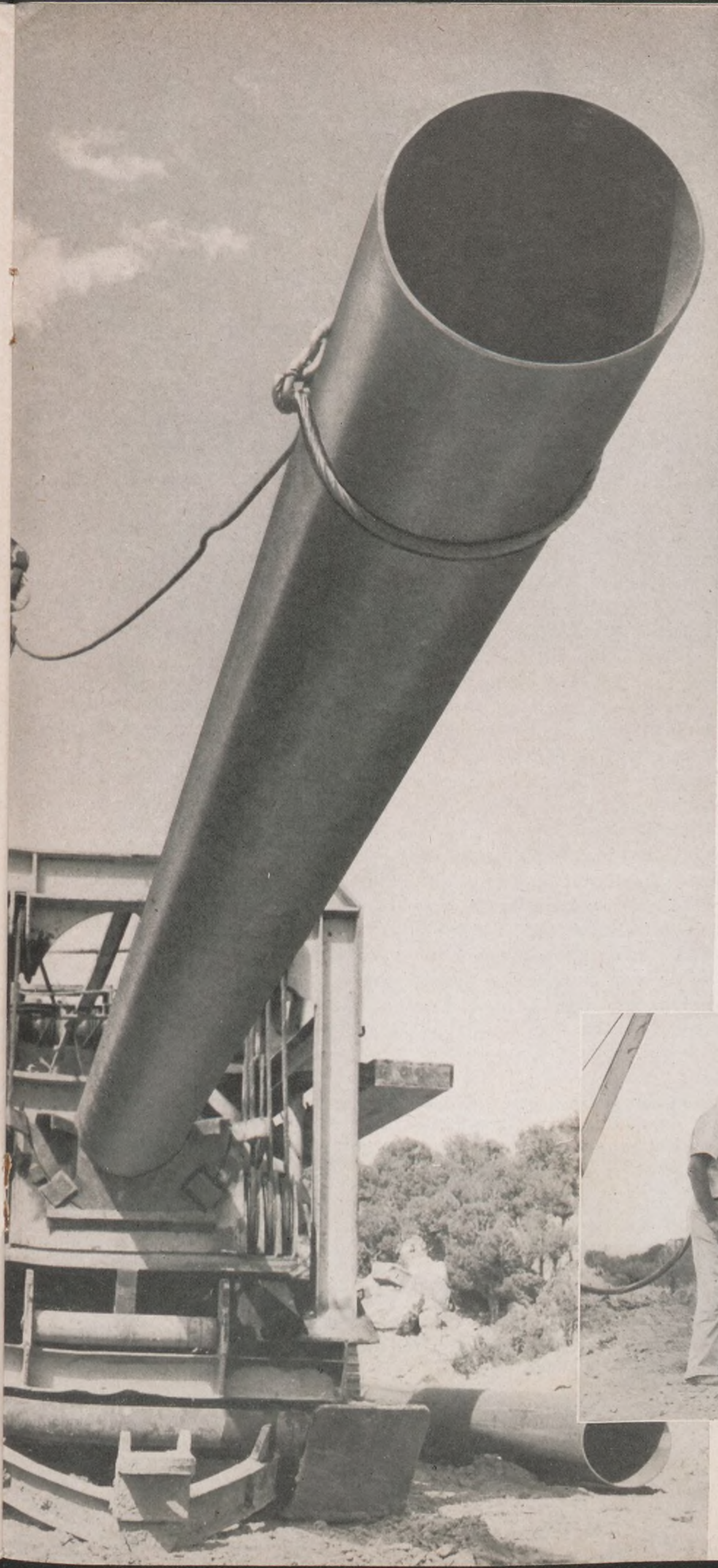
The eastern portion of the right-of-way, where construction started, is mostly sand and rock. Wherever possible, the line skirts rocky and hilly areas. But this is not always practical and many of the rocky portions have to be blasted away with dynamite to carve a path for the 16-inch steel pipe. After each blast, the loose rock remaining in the ditch is scooped up by a backhoe, a machine which runs alongside the ditch and operates something like an old-fashioned steam shovel. Any loose rock left by the backhoe is picked up by hand shovel.

When the pipe is laid in solid rock, the ditch must be padded with dirt. Sometimes there is sand close at hand but other times the padding dirt has to be brought in by truck.

Another problem peculiar to the climate is sudden rain squalls. Dry washes—harmless in dry weather—become torrents during a sudden rain. To guard against these flash floods, the pipe is buried seven feet when laid

The Four Corners Pipe Line starts in Utah, runs west to California. Pumping stations (see map) will be at Red Mesa, Cameron and Twentynine Palms.





in sandstone; one foot when laid in solid rock.

The sharp drops in elevation also cause some complications.

Elevation at the pipe line's starting point, near Aneth, is 4,500 feet. It rises to 6,700 feet near Kayenta. Ariz., drops to 4,500 feet at Cameron, Ariz., and rises to 6,500 feet just west of Cameron. Westward, there is a steady drop to the Colorado River, where the elevation is only 450 feet. The mountains begin rising again at the California border, reaching an altitude of 3,500 feet west of Twenty-nine Palms. The terminus in Los Angeles is at sea level.

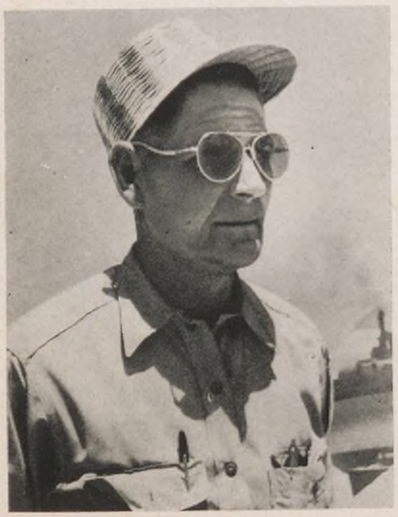
To control the flow of oil downhill, two pressure-reducing stations are being built, one at Kingman, Ariz., the other at Corona, Calif. Basically, these "braking" stations will consist of multiple small lines through which oil will pass causing it to lose some of its pressure. Each station also will be equipped with a tank for dumping the stream in case of a mechanical block.

Three pumping stations are being built to boost the flow of oil. These stations are located at Red Mesa,

Shell Pipe Line Inspector H. H. McDonald, foreground, inspects ditch.

Each section must be welded and each circular weld is inspected.

Workmen check coating with electric detector. Flaws set off sparks.



Shell Pipe Line Inspector L. H. Messersmith watches operations.

BIRTH OF A PIPE LINE

Utah; Cameron, Ariz., and Twentynine Palms, Calif. Both Red Mesa and Cameron will be equipped with three pumps driven by 900-horsepower motors. The Twentynine Palms station will have two pumping units. All three stations will be remotely controlled from Los Angeles. Red Mesa, however, will probably have a limited operating crew because crude from the Aneth and Bisti feeder lines will be received in tankage at this location; other stations will operate unattended. Sites already have been selected for feeder stations at Bisti, N. M.; Aneth, Bluff, North Desert Creek, North Boundary Butte and Desert Creek (all in Utah) and for the Los Angeles terminal. Sites have also been selected for future intermediate and main line stations, and valves are being installed in the line so these stations can be cut in later with a minimum of trouble. Plans call for a total of 14 main line stations, when Four Corners production justifies them.

The three rivers being spanned by the pipe line are the San Juan, the Little Colorado and the Colorado. At the San Juan crossing, where the river is about 1,300 feet wide, the line is laid in a dredged channel seven feet deep. To provide protection against corrosion, the pipe is bundled in three thick coats of tar enamel, which is reinforced with three layers of glass fiber.

The line also will cross through the Colorado River. Because the river is swift flowing, the pipe will be buried at least 15 feet, and possibly 20. Each section of pipe will be sheathed in concrete, in addition to being triple-coated with enamel and glass-fiber wrap.

In crossing the Little Colorado, however, the line won't even get its feet wet, thanks to a suspension bridge built 45 years ago under the auspices of the Navajo Indian tribe. The bridge, which spans the river at Cameron, has box trusses suspended on cables and was one of the first bridges so designed. The pipe line will be suspended from the top members of the trusses.

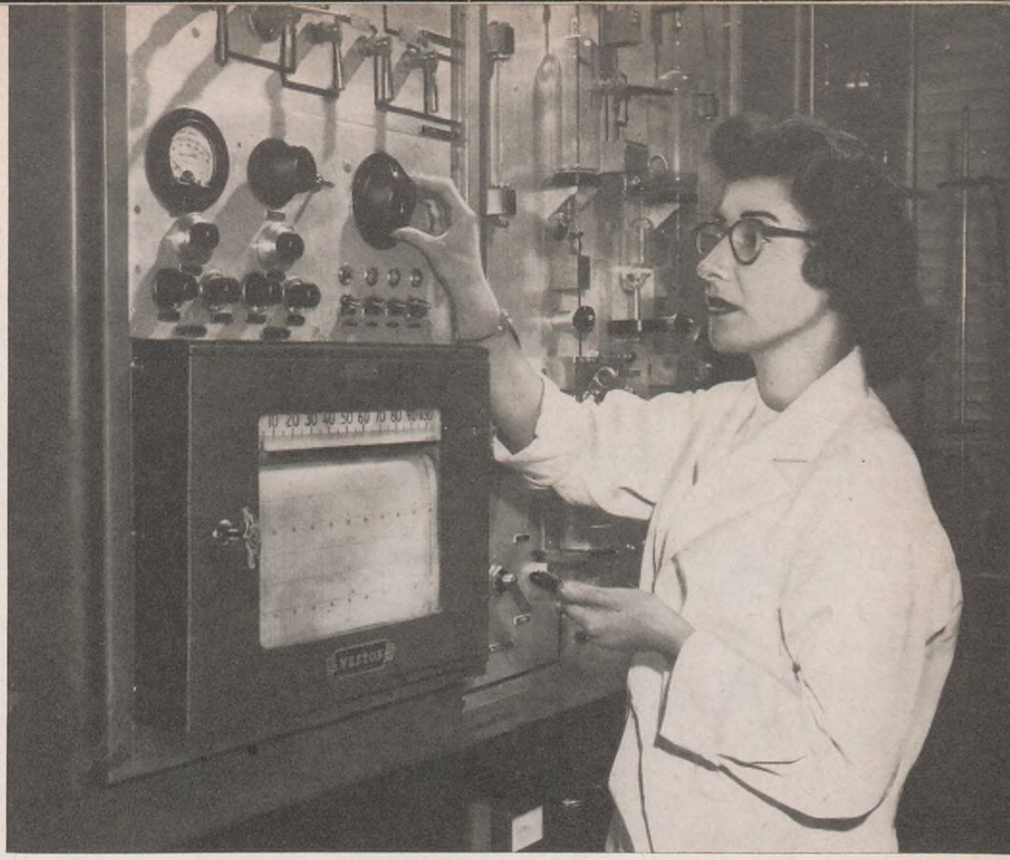
Work on the line currently averages two miles per day. Construction will begin shortly on sections in Los Angeles. Because congested conditions always present construction problems, railroad and power line rights-of-way will be used as much as possible in the Los Angeles metropolitan area.

Target date for completion of Four Corners Pipe Line is February 1, 1958. Then the link between Aneth and Los Angeles will come alive with oil ●

T. A. Fountain, Shell Pipe Line Inspector, uses a mirror to check outside of weld. In addition to visual inspection, many of the welds also are x-rayed.

BOOST FOR BETTER QUALITY

New Equipment for Closer Quality Control of Products is Now in Widespread Use by Shell



Miss Cary Venezia, an assistant in one of the laboratories at Shell Development Company's Emeryville Research Center, uses the gas chromatography equipment.

ONE of the most important developments in the quality control of refined products has been quietly gathering momentum in Shell Development Company's Emeryville Research Center during the last four years.

The development—gas chromatography—is probably one of the greatest analytical time-and-trouble savers ever afforded the refiners and researchers of petroleum products. It helps provide even higher quality and more efficiently manufactured oil products.

The chromatography concept itself is not new to analytical chemists. Two British biochemists, Dr. Archer J. P. Martin and Dr. R. Millington Synge, received the Nobel Peace Prize in 1952 for developing gas chromatography and for applying it to the solution of medical and biological problems.

But the analytical application of gas chromatography in industry and the construction of apparatus to put it into practice is comparatively new. Shell, though not responsible for the principle, has been in the forefront in the development of the apparatus.

The most commonly used conventional methods of checking the quality of a refined product may take from a few hours to a day or more. The more rapid spectrometric methods sometimes employed usually call for expensive and complex equipment. Even so, it is sometimes impossible to detect impurities with sufficient accuracy.

The process of gas chromatography brings the plant man a new tool; rapid, simple to operate and easily learned. Often a highly accurate analysis of a complex mixture takes less than half an hour; and only a drop or two of sample is needed. Chromatography thus fits into the plant picture like a missing puzzle piece, working alone or with the best previous methods to give a much better total result.

Here is how it works: The sample—either liquid or gas—is taken from the plant product stream and passed through a coil of selected length filled with finely-crushed firebrick, which is coated with a solvent. As the sample is pushed through the coil by a carrier gas, the solvent on the firebrick separates the sample's components.

The components travel at different rates through the coil. As each component emerges from the coil, it is recorded by an electronically-controlled pen on a moving chart. Concentrations of each component are recorded by abrupt upsweeps on an otherwise level line of the record. The sample's quality is interpreted from this record.

Chromatography equipment has been installed in all Shell research laboratories, where it is used to check experiments. It is also used in all Shell Chemical plants and in four of Shell's six refineries, where it aids in product control. In time, all of the refineries will incorporate this latest and most precise tool for controlling quality ●

RODEO FOR RETIREMENT

Shell Pensioner Runs Rodeo as Part of His Ranch-Life Retirement Activities

Pensioner Frank Benoit and his wife on their Iowa, Louisiana, ranch.

RUNNING a rodeo is an unusual retirement activity. But for Frank Benoit, it's as usual as stepping into his own backyard. That's where his rodeo is located.

Benoit may not have realized it, but he started his retirement plans soon after joining Shell in 1933 when he began buying ranch land near Iowa, Louisiana. Two years ago, he retired from his job as Roustabout at Iowa and devoted full time to managing his 120-acre ranch near the Shell oil field in southwestern Louisiana.

Most of Benoit's work year round concerns his herds of cattle and horses. His rearing on a farm and his spare-time activities throughout his Shell career gave him the experience to raise livestock.

But the high spots of the year for Benoit are the rodeos he started four years ago. A few yards from his back door are an arena, a system of pens and chutes, a judges' platform and a covered grandstand seating 100 fans. The arena is rigged with lights for night shows.

Rodeo competitors come from about 100 miles around. They vary from department store clerks to professional rodeo men; many are oil field employees. Some of the rodeos are fund-raising affairs for local charities.

Benoit does more than just run the rodeo. Most of the time he is busy keeping the animals in line, a task that calls for fast footwork. But sometimes, as a skilled rider, he enters a roping contest. He may not win many roping contests but he has lassoed a successful retirement ●

A bouncing cowboy takes his chances in a steer-riding contest in the rodeo arena near Benoit's back door. A covered grandstand is in the background.

Calf roping is one of the favorite events at the rodeo Benoit runs.

They have RETIRED

D. H. BAIR
Tulsa Area
Production

W. CAMPBELL
Tulsa Area
Production

F. C. COX
Shell Pipe Line Corp.
Texas Gulf Area

L. R. COX
Wood River Refy.
Engineering

F. E. DUTILH
New Orleans Div.
Operations

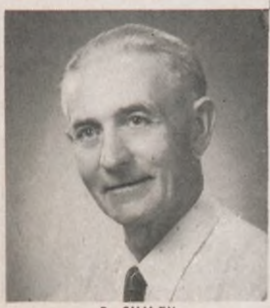
E. C. HANCOCK
Indianapolis Div.
Treasury

J. D. JENNINGS
Tulsa Area
Production

J. C. MORRIS
Head Office
Marketing

A. L. RICHARDS
Pacific Coast Area
Production

J. B. ROE
Tulsa Area
Gas



R. SMILEY
Wood River Refy.
Engineering

C. L. SMITH
San Francisco Office
Legal

H. L. WINELAND
Pacific Coast Area
Production

SHELL *Coast*

TARGET TUTOR

AFTER a competitive sharpshooting career spanning more than 35 years, T. R. Barnes, Senior Geoogist in Shell Oil Company's Midland Exploration and Production Area, now is spending most of his hobby time teaching others to shoot.

"I get just about as much fun now out of coaching a team as I once did in competition," he said. "I have no idea how many people I've taught to shoot."

His pupils get their instruction from an expert. Since he won his first individual championship in 1928, Barnes has collected so many medals and trophies that he has lost count of them. He believes the high point of his career was his national record for rapid fire at 200 yards in 1951 —a record which still stands. His 10-shot pattern was the size of a silver dollar.

Besides acting as referee in rifle matches and instructor to individuals, Barnes also has coached both California and Wyoming civilian rifle teams at championship meets. Both teams won "high civilian" ratings.

PARKING PROBLEM

W. A. Martin, center, Distribution Representative at the Argo Terminal of Shell Oil Company's Chicago Marketing Division, marks his scorecard while serving as a judge of Chicago's annual Teen-Age Safe Driving Road-e-o. Martin judged the parking skills of 60 drivers in the contest. The winner competed in the State of Illinois contest.

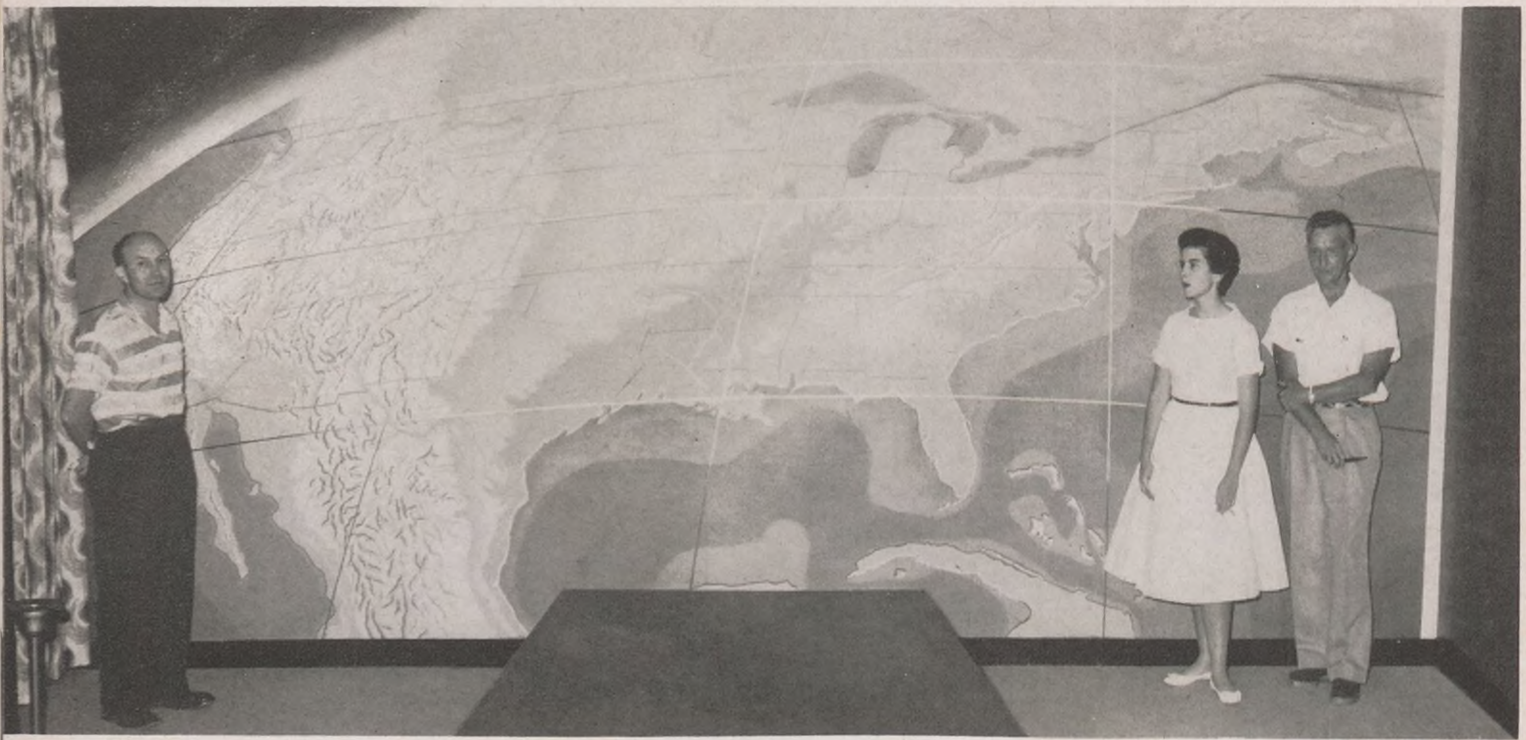
to Coast

LONG SHOTS

Two West Coast Shell golfers recently recorded holes-in-one. W. K. Hiatt, above of the San Francisco District of Shell Oil Company's San Francisco Marketing Division, fired his one-shot 270 yards. L. W. Campbell, left, of the Pacific Coast Exploration and Production Area's Survey and Drafting Department, shot his hole-in-one without benefit of a bounce. Campbell's drive sent the ball from the tee straight into the hole.

DEDICATED BOOK

Clyde Abshire, center, Deer Park (Texas) Superintendent of Schools, presents a copy of the 1957 Deer Park High School annual to B. B. Dorrell, right, Houston Refinery Dispatching Department Manager. The book was dedicated to Dorrell for his 12 years' service with the district school board. At left is W. A. Carpenter, Refinery Distilling Department Manager, to whom the 1954 yearbook was dedicated for similar service.



MAP MURAL

Draftsmen K. A. Guy, left, Marietta S. Moyer and L. S. Smith of Shell Oil Company's New Orleans Exploration and Production Area stand before the topographic map of the United States they painted in oils on the cork wall of a conference room in the New Orleans Shell Building. The mural, measuring nine by 17 feet, shows the U. S. as it would appear from 12,000 miles up. They first traced a map focused on the wall by projector, then filled in the details with brush and palette.

COMPOSITE CAR

THE trophy presented at right to Herbert Ludricks, Jr., son of H. E. Ludricks of Shell Chemical Corporation's Shell Point Plant, rewarded more than two years' work by the father-son team in creating their own automobile.

The trophy from the Oakland (California) National Roadster show, presented by the show's producer, was for the outstanding car in its class. Ludricks, a Mechanic in the plant's Engineering Department, and his then 13-year-old son started in late 1954 with a 1940 model automobile and revamped it. A 1948 model engine, with special features such as dual carburetors, supplied power. Special carpeting and upholstery modernized the interior. Chrome welting between body and fenders and a new paint job brightened the exterior.

Herbert displayed the car in auto shows throughout the area and won not only the Oakland award but also first place in the San Jose Autorama, and later took second place in the Turlock Motorcade.

Service BIRTHDAYS

Thirty-Five Years


E. E. CONROY
Pacific Coast Area
Land


W. J. REID
Pacific Coast Area
Production


A. E. ROSE
Wood River Refy.
Treasury


H. O. RUARK
Tulsa Area
Production


R. STANLEY
Pacific Coast Area
Production


E. A. STOBBE
St. Louis Div.
Operations

Thirty Years


C. R. BICKEL
Calgary Area
Production


W. N. BROWN
Midland Area
Gas


A. M. BURCKHARTT
Wood River Refy.
Lubricating Oils


R. A. BURKE
Tulsa Area
Production


J. W. BUTTREY
Wood River Refy.
Distilling


J. C. DINEEN
Shell Chemical Corp.
Torrance Plant


R. E. DRAPER
Anacortes Refy.
Administration


D. E. ERVIN
Pipe Line Dept.
East Chicago, Ind.


F. J. HAHN
Cleveland Div.
Sales


M. M. JONES
Tulsa Area
Production


O. A. KLEINERT
Wood River Refy.
Pers. & Indus. Rel.


E. W. KRIEGER
Portland Div.
Treasury


J. F. MAYBERRY
Shell Pipe Line Corp.
Mid-Continent Area


E. M. MAXWELL
Shell Pipe Line Corp.
Texas Gulf Area


H. O. McCABE
San Francisco Div.
Sales


E. L. McGRAW
Wood River Refy.
Catalytic Cracking


R. J. MICKELBERRY
Shell Pipe Line Corp.
Texas Gulf Area


O. O. MORGAN
Shell Pipe Line Corp.
West Texas Area


A. L. MORTOLA
Indianapolis Div.
Treasury


R. A. NORTON
San Francisco Office
Transp. and Supplies


W. J. RAMAGOS
New Orleans Area
Production


L. F. RAMALHO
Pipe Line Dept.
Ventura, Calif.

Thirty Years *continued*


J. T. REEVES
Midland Area
Production


W. L. SANGER
Pipe Line Dept.
Indianapolis, Ind.


P. SLATER
Pacific Coast Area
Production


J. M. SWAN
Seattle Division
Sales


W. TEMPELAAR-LIETZ
Pacific Coast Area
Production

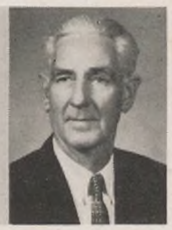

B. P. WALSH
Midland Area
Production


F. H. WELCH
Martinez Refy.
Refy. Laboratory


N. L. WOOD
Martinez Refy.
Engineering


K. M. WRIGHT
Seattle Div.
Sales

Twenty-Five Years


E. BAXTER
New Orleans Area
Transport-Materials


G. BERTRAM
Houston Area
Gas


E. R. BUTLER
Houston Refy.
Engineering


E. A. CAMERON
Albany Div.
Operating


J. E. CLARK
Midland Area
Vice President


R. L. DADING
New Orleans Div.
Treasury


C. A. DAVIDSON
Wood River Refy.
Pers. & Indus. Rel.


G. H. DEMPSTER
Head Office
Organization & Salary


S. J. DUHE
Norco Refy.
Engineering


J. DUNCAN
Pacific Coast Area
Production


M. H. HARDY
Baltimore Div.
Treasury


A. W. HENRY
St. Louis Div.
Sales


H. C. HOWELL
Indianapolis Div.
Marketing Service


J. C. HUNTER
Baltimore Div.
Sales


A. J. JEANFREAU, JR.
Norco Refy.
Catalytic Cracking


R. S. JO
Honolulu Div.
Operations


H. P. JOHNSON
Wilmington Refy.
Catalytic Cracking


D. D. KING
Indianapolis Div.
Sales


J. A. KUHN
Indianapolis Div.
Marketing Service


A. LENT
Shell Chemical Corp.
Shell Point Plant


F. V. MILLER
Pipe Line Dept.
Vicksburg, Mich.


T. J. PATTERSON
Shell Pipe Line Corp.
Texas Gulf Area


T. D. PAYNE
Tulsa Area
Production


A. POCHEK
Sewaren Plant
Compound


A. D. SCLATER
Los Angeles Div.
Treasury


C. A. SMITH
Portland Div.
Sales


M. R. UPSON
Tulsa Area
Transport


L. L. VEST
Shell Pipe Line Corp.
Mid-Continent Area


L. J. WOOD
Wood River Refy.
Thermal Cracking

SHELL OIL COMPANY

Head Office

20 Years

A. Howard........................Financial
W. F. Kenney....Vice Pres. & Gen'l Counsel

15 Years

Jean E. Fraser.....General Executive Office
R. K. MacIntyre............Manufacturing

10 Years

K. L. Baker......................Financial
D. J. Benolken..................Marketing
J. B. Erickson....................Financial
J. L. Fort........................Financial
K. K. Klein.................Explor. & Prod.
J. N. Limbach, Jr............Manufacturing
J. B. Mahoney..................Marketing
R. J. Sullivan............Transp. & Supplies
J. P. Swords.....................Financial
G. L. Tischer.............Pers. & Indus. Rel.

Exploration and Production

DENVER AREA

20 Years

G. W. Harris, Jr.......................Land
J. D. Moren...................Production

10 Years

E. W. Hubbard, Jr..............Exploration
L. K. Hyer......................Production
D. D. Peters........................Legal

HOUSTON AREA

20 Years

J. E. James..............Pers. & Indus. Rel.
C. Jensen.....................Exploration
V. Jones.........................Treasury
S. McCloud...................Production
H. K. McKinnon................Production
D. E. Reynolds...................Treasury
J. L. Wilson....................Production

15 Years

F. W. Pride....................Production
R. C. Riley.....................Production
H. P. Self.......................Transport

MIDLAND AREA

20 Years

G. Creighton.............Pers. & Indus. Rel.
O. B. Jackson..................Exploration

10 Years

J. C. Buttry...................Exploration
J. W. Gist......................Production
J. R. Pool........................Treasury
L. C. Reed.....................Production
E. M. Richardson.................Treasury
L. Sledge......................Production
E. E. Trumbull...................Transport
V. H. Wright.........................Gas

NEW ORLEANS AREA

20 Years

S. Anastasio...................Production
D. J. Delaune..................Production
K. A. Holeman.................Production
F. S. Rills..............Transport-Materials
W. G. Schilhab.................Production

15 Years

H. H. Boerm...................Exploration
G. W. Randolph................Production
O. Rogers......................Production

10 Years

G. J. Esteves..................Exploration
B. W. Ford.....................Production
M. E. Hutchison................Exploration
B. M. Jordan.....................Treasury
O. G. Leach...........Transport-Materials
C. R. Miceli....................Production
R. Mitchell.....................Production
E. R. Pizzati...................Production
C. C. Sandoz.........................Gas
J. A. Usner....................Production

PACIFIC COAST AREA

20 Years

C. H. Arnold.............Purchasing-Stores

15 Years

C. Carpenter..................Production
B. L. Garrison.................Production
G. I. Kinneberg..........Pers. & Indus. Rel.
D. R. MacLean.................Production
Virginia C. Peterman...........Production
F. R. Vogan..........................Gas

10 Years

J. O. Edwards..................Production
W. A. Equitz, Jr................Production
J. A. Johnston.................Production
N. H. MacKevett...............Exploration
J. H. Tindle...................Production

TULSA AREA

20 Years

J. B. Brooks...................Production
E. L. Hobbs...................Production
H. L. Rickard..................Exploration
E. B. Wilkins...................Production

15 Years

O. M. Bassett....................Treasury
T. B. Davis.......................Treasury
C. B. Stedman.................Production

10 Years

J. B. Lewis.....................Production
A. Shockley....................Production

Manufacturing

ANACORTES REFINERY

10 Years

S. A. Brister, Jr...............Engineering
D. F. Nisbet...................Engineering

HOUSTON REFINERY

20 Years

H. G. Giebelstein......................Gas
R. B. Mann....................Engineering
T. N. Rodden...................Engineering
G. A. Smith....................Engineering

15 Years

B. E. Daniels...................Engineering
J. W. Fosha...................Engineering
M. G. Jordan..........................Gas
J. L. Kolb................Lubricating Oils
J. L. Lemons..........Research Laboratory
E. Thomas.............Refinery Laboratory
W. J. Winfree..................Engineering

10 Years

C. F. Andrews.................Engineering
J. D. Boyd.....................Engineering
C. W. Cargill.............Lubricating Oils
W. B. Cummins............Lubricating Oils
C. J. Ford................Lubricating Oils
R. E. Ford.............Refinery Laboratory
R. L. Gibson...................Engineering
L. L. Jenkins..................Engineering
M. E. Klecka..........Research Laboratory
J. H. Locke....................Engineering
B. R. Lofgren..................Engineering
G. F. Preece...................Engineering
F. L. Shoemake................Engineering
L. F. Strange, Jr...............Engineering
E. G. Suhr.....................Engineering
E. E. Vogelsang................Engineering
D. B. West.....................Engineering

MARTINEZ REFINERY

20 Years

V. R. Traner...........Research Laboratory

15 Years

J. S. Davilla................Compounding
F. F. Farley............Research Laboratory
E. J. Peyrucain................Engineering

10 Years

S. Lino, Jr.......................Cracking

NORCO REFINERY

15 Years

H. J. Hotard....................Distilling
J. L. Perilloux.................Dispatching
L. L. Perret....................Laboratory
M. J. St. Pierre.................Laboratory
H. J. Triche.............Catalytic Cracking

WILMINGTON REFINERY

15 Years

C. E. Chason...............Compounding

10 Years

J. W. Elger....................Engineering
R. A. McFarland........Refinery Laboratory
C. J. Stark....................Engineering
F. E. Vidaurri..................Engineering

WOOD RIVER REFINERY

20 Years

J. D. Farmer..................Engineering
D. C. Holder...................Engineering

W. W. Horstman....... Research Laboratory
R. C. Reed.................... Engineering
C. E. Reichert.................... Treasury
R. R. Schneider................ Engineering

15 Years

G. C. Anderson............... Dispatching
C. C. Bishop.................... Alkylation
F. W. Carroll................. Engineering
C. R. Clark.................. Engineering
C. U. Cruthis................ Engineering
G. Cruthis................... Engineering
D. Dickinson................ Compounding
W. L. Doering................ Engineering
M. G. Dresch................ Engineering
O. H. Dunham............... Engineering
C. E. Fry.................... Engineering
A. N. Hall................. Compounding
F. Kolesa.................... Engineering
H. C. Kuhlman......... Refinery Laboratory
A. L. Luebbers............... Engineering
N. L. Malwitz................ Engineering
G. C. Musgrave.... Experimental Laboratory
M. K. Phillips................ Engineering
C. A. Reynolds............... Engineering
E. W. Runyon.......... Catalytic Cracking
C. V. Sauls.................. Engineering
W. H. Shults................. Engineering
J. H. Temple................. Engineering
S. E. Wright........... Refinery Laboratory

10 Years

F. J. Apple.................. Engineering
J. W. Baker.................. Dispatching
C. E. Barrow................. Engineering
A. W. Beyer.................. Engineering
C. W. Blair................... Engineering
W. L. Blind.................. Engineering
O. Brown.................... Engineering
F. W. Burger................. Engineering
C. I. Cunningham............. Engineering
J. N. Hellrung............... Engineering
W. L. Hess.................. Engineering
W. R. Hester................. Engineering
B. L. Hill.................... Engineering
G. C. McNelly................ Engineering
S. Saltich.................... Engineering
E. D. Speed.................. Engineering

Marketing

MARKETING DIVISIONS

20 Years

C. A. Leland................. Albany, Sales
G. C. Pugh............ Albany, Operations
A. J. Wilson........ Atlanta, Administrative
W. G. Ewing......... Baltimore, Operations
W. J. Carroll, Jr......... Boston, Operations
A. H. Halberstadt............ Boston, Sales
W. H. Day................ Chicago, Sales
H. W. Cooper....... Cleveland, Operations
J. W. Eldridge, Jr........ Los Angeles, Sales
R. F. Upson............. Los Angeles, Sales
J. J. Sparks.......... New York, Operations
F. E. Gueldner...... Sacramento, Operations
R. J. Meyer........... St. Louis, Operations
C. E. Johnson........... Seattle, Operations
E. W. Marsh................. Seattle, Sales

15 Years

C. T. Schleeter........ Baltimore, Operations
C. E. Lane............ Boston, Operations
G. V. Rogers................ Boston, Sales
E. E. Clarke........... Chicago, Operations
J. A. Bell.............. Detroit, Operations
D. L. Jolly... Indianapolis, Marketing Service
E. Butler........... Los Angeles, Operations
J. R. Stapleton........ Minneapolis, Treasury
L. Cullen.................. St. Louis, Sales
C. H. Feldman........ St. Louis, Operations
F. A. Mertz........... St. Louis, Operations
Margaret O. Androgn.. San Francisco, Treas.

10 Years

R. A. Sandstrom...... Baltimore, Operations
R. G. Fleuriot................ Boston, Sales
R. R. Radke........... Chicago, Operations
J. A. Martin............... Cleveland, Sales
J. C. Sealey............... Cleveland, Sales
J. W. Edwards.......... Detroit, Operations
I. R. Ferriby............ Detroit, Operations
E. Kluz................. Detroit, Operations
K. Tomasa............ Honolulu, Operations
P. M. Abbett....... Indianapolis, Operations
R. S. Wagoner..... Indianapolis, Operations
Marie S. Harris....... Los Angeles, Treasury
M. C. Meier....... Minneapolis, Operations
B. E. Cochran...... New Orleans, Operations
C. D. Lynn............. New Orleans, Sales
M. M. Corcoran......... New York, Treasury
H. R. Frisbie.......... Portland, Operations
L. T. Conklin................ St. Louis, Sales
R. B. Fisher................ St. Louis, Sales
W. D. Herman.............. St. Louis, Sales
F. E. Meyers........... St. Louis, Operations
A. H. Sykes................. Seattle, Sales

SEWAREN PLANT

20 Years

C. W. Donovan................ Compound
A. Katona..................... Asphalt

15 Years

J. A. Nelson..................... Asphalt

10 Years

A. L. Gardella................ Warehouse

Pipe Line Department

20 Years

R. W. Dawes.............. Fall River, Mass.
W. E. Laswell.................. Lima, Ohio
J. L. White................ Zionsville, Ind.

15 Years

C. E. Barber.............. Lost Hills, Calif.
C. M. Harvey................. Simi, Calif.
D. J. Mosley................ Wasco, Calif.

10 Years

W. H. Axelby............ Indianapolis, Ind.
J. R. Kinnard................ Doraville, Ga.

SHELL CHEMICAL CORPORATION

20 Years

G. E. Jennings................. Shell Point
L. T. Roberts.................. Shell Point

15 Years

E. R. Scogin................. Head Office
G. M. Seaman................ Head Office
C. S. Camp...................... Houston
F. M. Henshaw.................. Houston
R. H. Marsh.................... Houston
F. M. Scott..................... Martinez
O. L. White..................... Martinez
H. E. Veron....................... Norco

10 Years

D. M. Neely................. Head Office
C E. Thornley............... Head Office
A. Andres...................... Houston
E. R. Baldwin................... Houston
E. Barrett...................... Houston
H. R. Brooks.................... Houston
J. P. Brooks.................... Houston
I. F. Callaway................... Houston
J. E. Collins.................... Houston
A. E. Corll...................... Houston
W. Evans....................... Houston
H. L. Fannin.................... Houston
B. C. Gregg..................... Houston
N. M. Hartman.................. Houston
E. A. Janquart................... Houston
R. L. Martin..................... Houston
P. E. Ohls...................... Houston
J. L. Tipton..................... Houston
C. S. Wolfe..................... Houston
J. Bettencourt................. Shell Point

SHELL DEVELOPMENT COMPANY

20 Years

E. L. Sturm.................... Emeryville

15 Years

R. R. Whetstone.................. Denver
Hope H. Hightower............. Emeryville
J. W. Nelson................... Emeryville
Lucretia M. Whitney............ Emeryville

10 Years

A. S. Chandler................ Emeryville
R. C. Clement................. Emeryville
W. H. Husing.................. Emeryville
R. W. Chester.................. Houston
J. V. DeCesare.................. Houston

SHELL PIPE LINE CORPORATION

20 Years

P. L. Clopton.......... Mid-Continent Area
G. F. Franklin.......... Mid-Continent Area
R. E. Garman.......... Mid-Continent Area
A. M. Paschall......... Mid-Continent Area
J. L. Tippin............ Mid-Continent Area

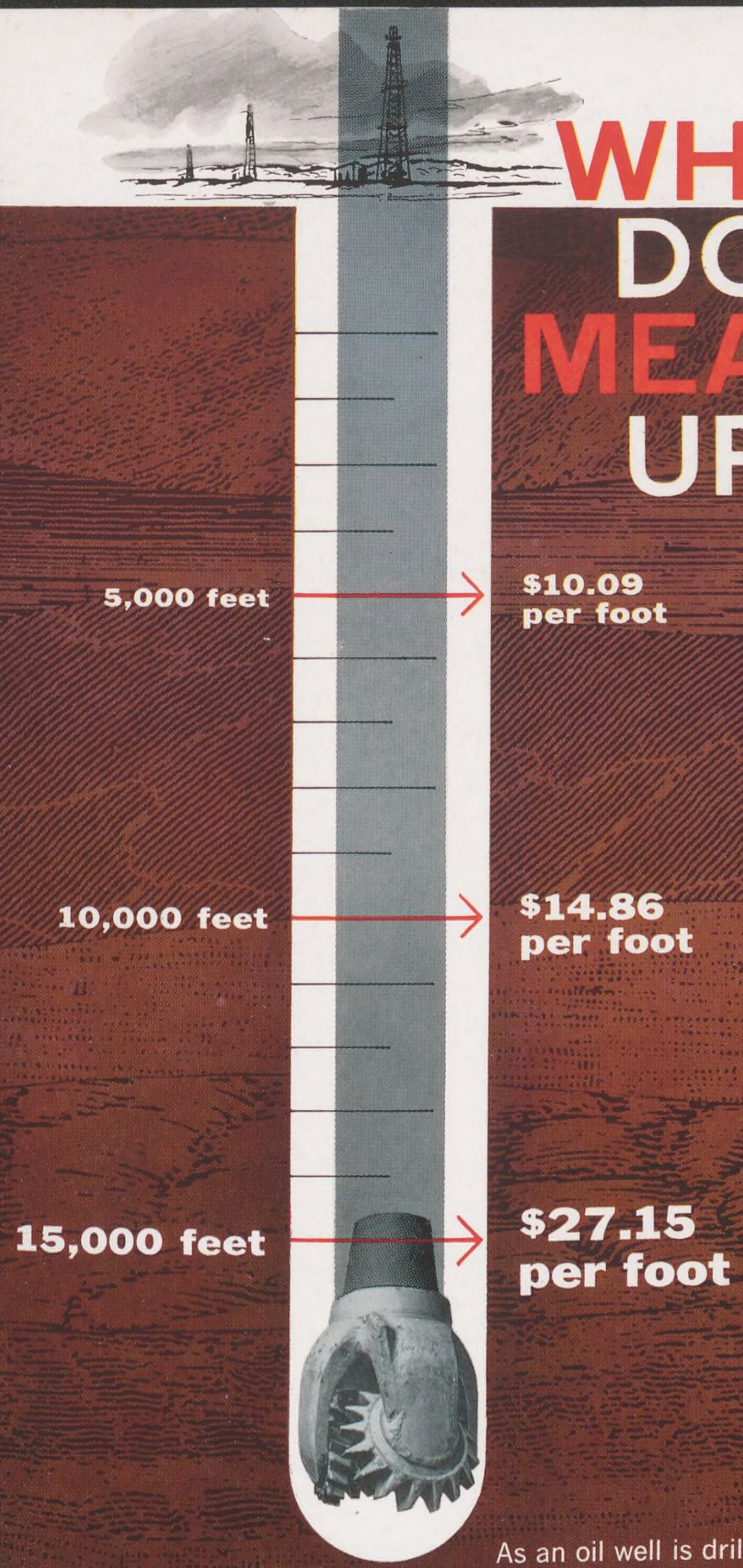
15 Years

V. A. Collins........... Mid-Continent Area
L. W. Ebdon................. Head Office
J. L. Jones............... West Texas Area
M. S. Lloyd............ Mid-Continent Area
R. D. Love............. Mid-Continent Area
W. E. Rhea.................. Head Office
E. V. Rogers............. West Texas Area
J. L. Tuttle............ Mid-Continent Area

10 Years

M. C. Bass.................. Head Office
W. E. Duncan.......... Mid-Continent Area
A. J. Lewis.............. West Texas Area
B. B. Parker............. West Texas Area
J. C. Shumate............ West Texas Area

WHEN DOWN MEANS UP



As an oil well is drilled deeper, each foot costs more than the one before it. Last year, for example, a 5,000-foot well cost an average of $10.09 per foot; but one 15,000 feet deep averaged $27.15 per foot—that's a total cost of $407,250. Last year, 150 wells in the United States were drilled past the 15,000-foot mark—a depth once considered beyond reach—and this year oil men expect to sink 200 wells below that depth. Some will find oil, others will be expensive dry holes. Shell and other oil companies continue the search at deeper depths to meet the nation's mounting needs for oil.

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Houston 23, Texas

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THE SKY'S THE LIMIT

The aircraft industry reaches always for new limits in the sky—speed, endurance, height. Shell helps break the barriers to progress by providing fuels and lubricants that answer the aircraft industry's problems. The latest Shell contribution is an improvement in three of its aviation greases—AEROSHELL® Greases 6, 7 and 11. They help aircraft reach new limits in temperature and pressure extremes. Manufactured at the Martinez Refinery, they boost Shell's position as a major supplier of quality aircraft fuels and lubricants.