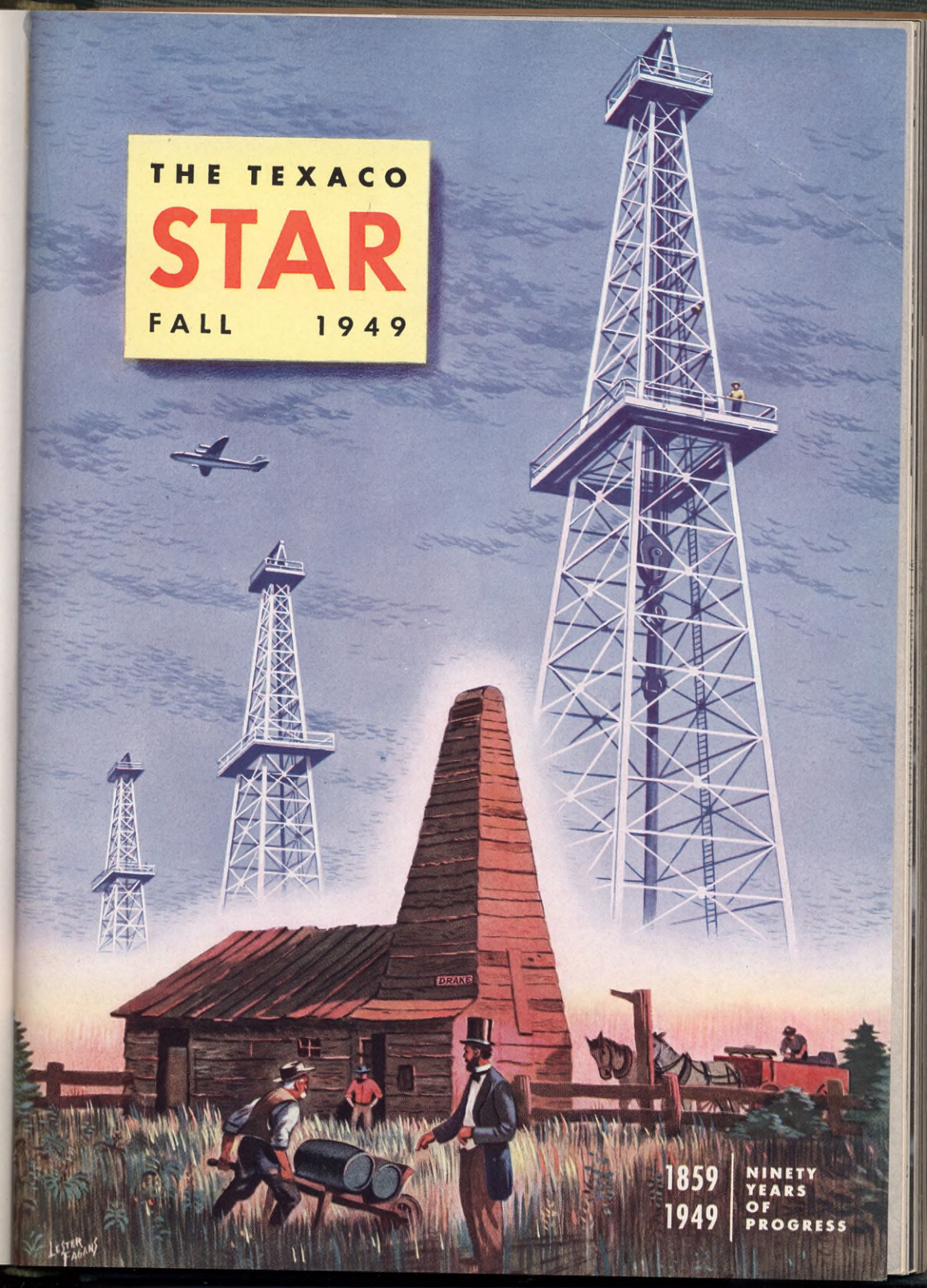

THE TEXACO
STAR
FALL 1949
DRAKE
1859
1949
NINETY YEARS OF PROGRESS
LESTER FAGANS

PROGRESS... For the past 90 years the petroleum industry's development has been a story of steady progress. This issue of THE TEXACO STAR reviews that progress. The mighty catalytic cracking unit shown above under construction at Texaco's new Eagle Point (N. J.) Works typifies Texaco's progress in oil refining facilities since the Company's early days at Port Arthur Works, Texas (left, pictured in 1903)

THE TEXACO STAR

Fall, 1949

VOLUME XXXVI NUMBER 4

CONTENTS

A PUBLICATION OF THE TEXAS COMPANY

For Stockholders and Employes

W. S. S. Rodgers, Chairman of the Board of Directors; Harry T. Klein, President; R. F. Baker, M. Halpern, B. E. Hull, J. S. Leach, L. H. Lindeman, A. C. Long, R. Ogarrio, C. E. Olmsted, R. L. Saunders, James Tanham, and Torrey H. Webb, Vice Presidents; Oscar John Dorwin, General Counsel; W. G. Elicker, Secretary; Robert Fisher, Treasurer; Ernest C. Breeding, Comptroller, 135 East 42nd Street, New York 17, New York. . . . Published by the Public Relations Department, Philip C. Humphrey, Manager; Wilfred B. Talman, Editor, Company Publications Division; J. Lawrence Filson, Assistant Editor; Ellis Prudden, Joseph A. Callanan, Associate Editors.

Printed in the U. S. A.

PICTURE CREDITS: Front Cover, Lester Fagans; Inside Front Cover, Roy Stevens, The Texas Company; Page 4, Wendell MacRae; Page 5, American Petroleum Institute; Page 7, American Petroleum Institute, Robert I. Nesmith; Page 9, Wendell MacRae, Ira Carroll; Page 10, A. C. Long (Bachrach); Page 11, Robert Fisher (Bachrach); Pages 12-13, Irving Geis; Page 14, Robert I. Nesmith; Page 15, Irving Geis; Page 16, The Texas Company, Bachrach; Page 17, Irving Geis, The Texas Company; Pages 18-19, The Texas Company, Shell Oil Company, Incorporated; Page 20, Shelburne; Page 21, Robert I. Nesmith.

Brief AND TO THE POINT

A FAR CRY—In 1859, the news of the discovery of oil at Titusville, Pennsylvania, received scant coverage in the press. Much more interest was aroused by the coal-burning steamship *Great Eastern*—the biggest and most powerful ship afloat. She made the Atlantic crossing in 11 and one-half days the following year. Today, oil-burning liners make the Atlantic trip in four and one-half days, and three-quarters of the world's shipping runs on oil.

★

AROUND AND AROUND—There are 402,000 miles of oil and natural gas pipe lines in the United States, enough to circle the world at the equator 16 times!

★

NO FISSION TODAY—Production of nuclear power as a substitute for steam or water power generation is certain to be in an experimental stage for at least 15 years, according to experts. Application of nuclear power to the automobile, the airplane—to house heating or even to the locomotive—is out of the question, scientists say, because of the weight and cost of shielding required, and because of the difficulty or impossibility of disposing of nuclear "ash" resulting from the fission process. In the case of the locomotive, which might be considered to offer a good field because of its ability to carry the necessary shielding, the chief danger lies in the chance of a wreck or derailment splitting open the nuclear reactor and spilling the dangerously radioactive fission products.

★

SURFACE VALUE—Enough Texaco Asphalt was sold last year to lay a three-inch surface on two 30-foot-wide highways—one linking New York City with San Francisco, the other running from New York to Houston.

★

OIL'S LANDLORDS—About 2,000,000 Americans own oil lands in the United States. Some of these lands already are producing substantial royalties for their owners. Other areas provide their owners with rental, lease, and bonus payments. It is estimated that landowners and royalty holders receive more than $300,000,000 annually from the petroleum industry.

★ ★ ★ THE COVER ★ ★ ★

★The "Drake Discovery" in 1859, near the little backwoods town of Titusville, in northwestern Pennsylvania, marked the beginning of a new era for a lusty, young America, broadening the horizons of men a thousandfold. From Drake's derrick grew the modern petroleum industry—an industry with 34,000 competitive companies, nearly 2,000,000 employes, and a vital rôle in the maintenance of America's progressive economy.

GASOLINE TAXATION

By HARRY T. KLEIN

President of The Texas Company

PROBABLY most of The Texas Company's stockholders read the footnote on Page 6 of the Company's Annual Report for the year 1948 which indicated that "... state and Federal gasoline and oil taxes were paid or accrued in the amounts of $176,851,775 during 1948. . . ."

How many stockholders, we wonder, grasped the real significance of this statement? It was simply this:

The Company's consolidated net profit for the year 1948, after all charges, was $165,980,980. State and Federal taxes on gasoline and oil sold by our Company in 1948 exceeded the Company's total net profits by $10,870,795.

Just the direct sales taxes on gasoline and oil are represented by the figure of $176,851,775. This amount does not include income taxes or any other taxes on the operations of the Company. Most of the $176,851,775 came from state and Federal levies on gasoline alone.

Figures such as these are not peculiar to our Company. Every oil company marketing in the United States is compelled by law to collect gasoline taxes from its customers and remit the taxes to Federal, state, and (sometimes) local governments. Altogether, the oil companies of the United States were responsible for the collection and remittance to Federal, state, and local governments of $1,843,904,000 in gasoline taxes during 1948.

Doesn't this figure of nearly $2,000,000,000 in special taxes on one product alone seem staggering? Needless to say, it was staggering to the people who had to pay it. For remember, most of this money came out of the pockets of motor vehicle owners—the principal customers of our industry. It came from people who are responsible for all general taxes imposed by all levels of government as well as for the special taxes levied upon them just because they use gasoline. Many people are greatly surprised to learn that of all the sources of state revenue, only general sales taxes take more money from the taxpayer each year than the gasoline tax. A general sales tax is paid by everybody, but a gasoline tax is levied principally upon those who own cars and trucks.

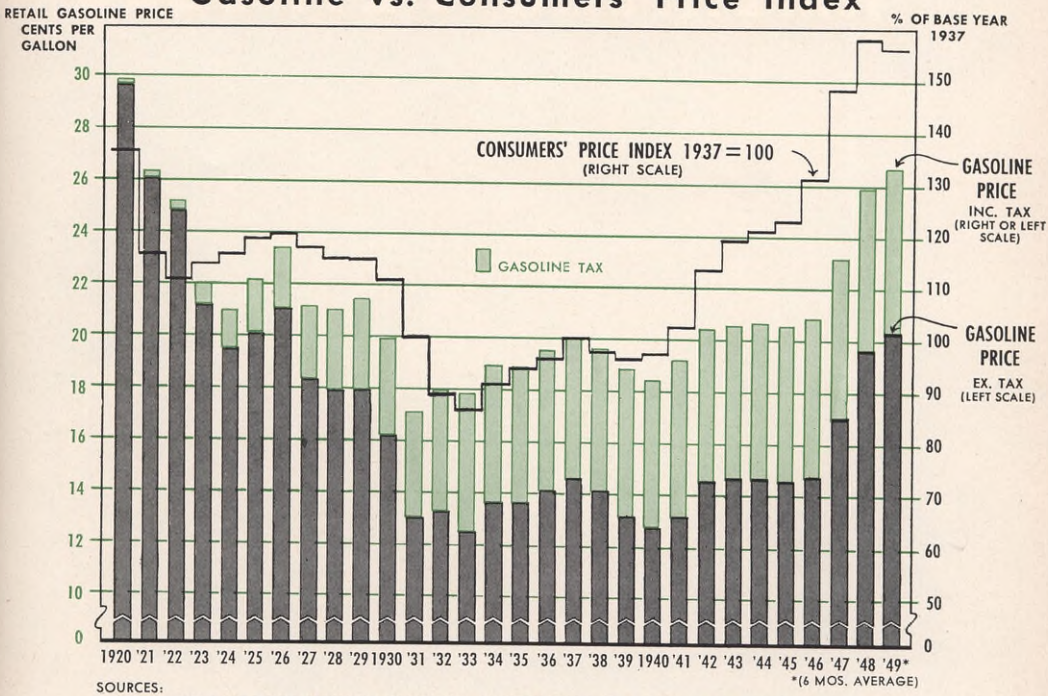
During the past several months there has been considerable agitation in the public press and before Congress that the present price of gasoline is excessive—this contention being made in the face of the following facts:

1) The service station price of gasoline on July 1, 1949, excluding tax, was 68.6 per cent of the average service station price, excluding tax, for the year 1920 and was 97.3 per cent of the average service station price, excluding tax, for the year 1926;
2) Since the year 1926 the annual domestic demand for gasoline has increased from 11,261,376,000 gallons to 36,590,400,000 gallons in 1948 in order to service approximately 41,000,000 motor vehicles in this country in 1948 as compared with 22,000,000 vehicles in 1926;
3) The increase in the service station price of gasoline, excluding tax, since the prewar year of 1941 has been only 53 per cent, while the prices of all commodities, as reflected by the index of retail prices compiled by the Department of Commerce, have increased 74 per cent;
4) The cost of practically every material and service connected with the production of crude oil and its transportation, and with the manufacture and sale of gasoline, has increased considerably since 1926;
5) The decrease in the value of our currency since 1926;
6) The gasoline of today is so superior to the gasoline sold in 1920 or 1926 that the products are not comparable. This improvement in quality has been made possible primarily by improved refining equipment and technique developed by the oil industry at great cost.

What is the reason for these complaints about the price of gasoline in view of the factors outlined above? It must be that those who complain do not give due weight to the fact that the gasoline sales

RETAIL PRICES

Gasoline vs. Consumers' Price Index



SOURCES:
CONSUMERS' PRICE INDEX: NATIONAL INDUSTRIAL CONFERENCE BOARD (ADJUSTED TO 1937 BASE)
GASOLINE PRICES & TAXES: THE TEXAS COMPANY

taxes being collected at a service station at the time of purchase represent such a large part of the purchase price, and do not bear in mind the fact that these sales taxes (which have been paid as a part of the purchase price of gasoline) must be repaid promptly by the oil company to the Federal and state governments.

The above chart illustrates the remarkable increase in gasoline taxes over the past three decades and shows clearly that, notwithstanding this great increase in taxes, the price of gasoline has not advanced as much since 1941 as the general average of prices paid by the consumer. Critics of price increases of gasoline have apparently overlooked the fact that gasoline prices were stabilized at an artificially low level during the war while the prices of most other commodities purchased by the consumer advanced substantially during that period.

How did a product as useful as gasoline and in everyday use by such a large proportion of the population come to bear burdens so much heavier than those loaded on even the most ostentatious luxuries? Briefly, these are the facts:

By the end of World War I, the motor vehicle had ceased to be a plaything and was becoming an important influence in American life. As more and more cars appeared on the scene, the need for better roads was keenly felt. And, in turn, the need for better roads produced a need for revenue to build them.

Oregon hit upon the idea of taxing gasoline to raise the money needed to build automobile highways. In 1919, Oregon imposed the first gasoline tax. Everyone, especially motorists and the petroleum industry, applauded the idea behind this tax because it was so eminently reasonable. Combined with the registration fee, a gasoline tax seemed the most accurate way of measuring how much each vehicle owner should pay for the use of the highways.

(*Please turn to Page 22*)

AMERICAN PETROLEUM:

Story of Progress

DISCOVERY of oil at Titusville, Pa., in 1859 started a wild oil rush. Derricks began to appear almost everywhere

1859

A dream came true

THE world needed petroleum . . . and lots of it.

The "need" is something we see in retrospect. Few people were aware of the shaping of this need even by the late Eighteenth and early Nineteenth Centuries.

Hundreds of years before Edwin Laurentine Drake's historic derrick rose along the oil flats near Titusville, Pennsylvania, the American Indian had some well-developed notions about the value of oil.

He used petroleum for healing purposes and for oiling his body. He burned oil in his rituals. He used asphaltic bitumens to waterproof his canoe.

Oil springs and seeps were precious. Like salt deposits, they were places where one found basic necessities to living. Trails that led to, or past, oil springs and seeps were designated "peace trails" which even in time of intertribal war were open to one and all.

This "safe conduct" aspect, of course, made such trails well traveled.

When the white man first left his seaboard settlements, he followed many of the Indian trails into the western wilderness. Crossing the Alleghanies, for example, he passed oil springs near Cuba, New York, and came down into western Pennsylvania along fabulous Oil Creek, birthplace of the American petroleum industry.

The white man recognized the curative properties of oil and used oil not only in the treatment of his own ills but also in the care of sick and injured horses and other domestic animals.

He used it as an insect repellent, burned it in

CONSERVATION practices of the modern oil industry have relegated scenes like the above to history, have made picture (left) of drilling in West Texas typical

PETROLEUM is an old story.

Men were wise in the uses of petroleum long before Christ walked in lonely splendor on the glistening shores of Galilee.

Stories of antiquity abound with references to oil in one form or another. Pitch was used for mortar in the walls of the tower of Babel. Noah was ordered by God to build an ark and "pitch it within and without . . ." Egyptian kings lubricated the wheels of their chariots with petroleum.

The Chinese used natural gas in their houses for both heat and light more than 2,000 years ago. They piped it through bamboo pipe lines.

A score of years after the death of Christ, the great Roman naturalist—Pliny the Elder—recommended oil for bleeding, cataract, leprosy, gout, toothache, rheumatism, and for straightening eyelashes.

By the time Columbus discovered the land that was to give the world the modern oil industry, petroleum had entered into the service of man in many ways.

It lighted the darkness for him, it warmed him, and it helped keep his ships afloat. It lubricated his wheels and healed his ills.

But American ingenuity was to reveal in petroleum the amazing bounty of *energy* —the *power* which would release man from drudgery, speed the progress of the industrial revolution, and catapult man into the machine age.

The American petroleum industry was to become a lesson to the world in the ways of democracy. It has served the defenders of freedom in crisis and has added to the blessings of free men in peace.

crude lamps, greased axles, and lubricated machinery with it.

By 1800, men were searching for an improved way to get light. The demand for whale oil and tallow candles had become far greater than the supply.

In 1826, Dr. S. P. Hildreth of Marietta, Ohio, wrote: "*Petroleum affords considerable profit and is beginning to be in demand for lamps and work shops and manufactories. It affords a clear, brisk light when burnt this way and will be a valuable article for lighting the street lamps in the future cities of Ohio.*"

A Scotsman, James Young, distilled oil from coal and shale in 1847. About 1854, a Canadian geologist, Dr. Abraham Gesner, developed an improved coal oil for lamps and called it "kerosine," a name which soon became well known in petroleum terminology.

The stage was set. The world needed oil whether it knew it or not. The Indian had led the white man to scattered sources of oil supply.

But how to get it in quantity?

The Indian and the white man still used such primitive methods as scooping oil film from water in sumps and pits dug for the purpose. Or they dipped blankets into oil springs and creeks and wrung out the oil slowly, patiently.

There was a clue, but it was wrapped up in irritation and nuisance. Early in the 1800's, men were digging artesian brine wells in western Pennsylvania, West Virginia, and Ohio. Every now and then a well would be fouled by a flow of oil.

Oil may have been an annoyance to many, but it began to spark the initiative of a few men by the middle of the Nineteenth Century.

Samuel M. Kier, a salt-well entrepreneur at Tarentum, Pennsylvania, saw something in the oil that seeped into his brine wells. He bottled it and sold it as "Kier's Petroleum or Rock Oil"—a cure-all in the long tradition of nostrums for human ailments.

Kier had some advertising pieces made up. They showed the structure of the derricks used for boring and pumping the brine wells.

About 1857, George H. Bissell, a lawyer and businessman, saw the advertising in a drug store window while strolling down Broadway in New York City—and something clicked in his mind.

Drill for oil!

Put down a well for the specific purpose of bringing oil up out of the earth!

The story of Bissell's remarkable revelation starts in 1853, in a professor's office at Dartmouth College, of which Bissell was an alumnus. There, Bissell saw the latest laboratory curiosity—a bottle of "rock oil" obtained from land on Oil Creek, near Titusville, Pennsylvania. That rock oil, his professor friend asserted, would make a better illuminant than coal oil.

Impressed by the commercial possibilities of such a substance, Bissell journeyed to Titusville, inspected the oil springs in the vicinity, and acquired some oil lands there. In 1854 he, with others in New York, formed the first petroleum company in the United States—the Pennsylvania Rock Oil Company. It was formed to produce oil for illuminating purposes.

A noted chemist at Yale College, Professor Benjamin Silliman, Jr., was engaged to analyze the oil obtained from trenches dug on the company's property. Silliman issued a report which disclosed that Bissell and his associates had, in the petroleum existing in their land, an enormously important and valuable natural resource.

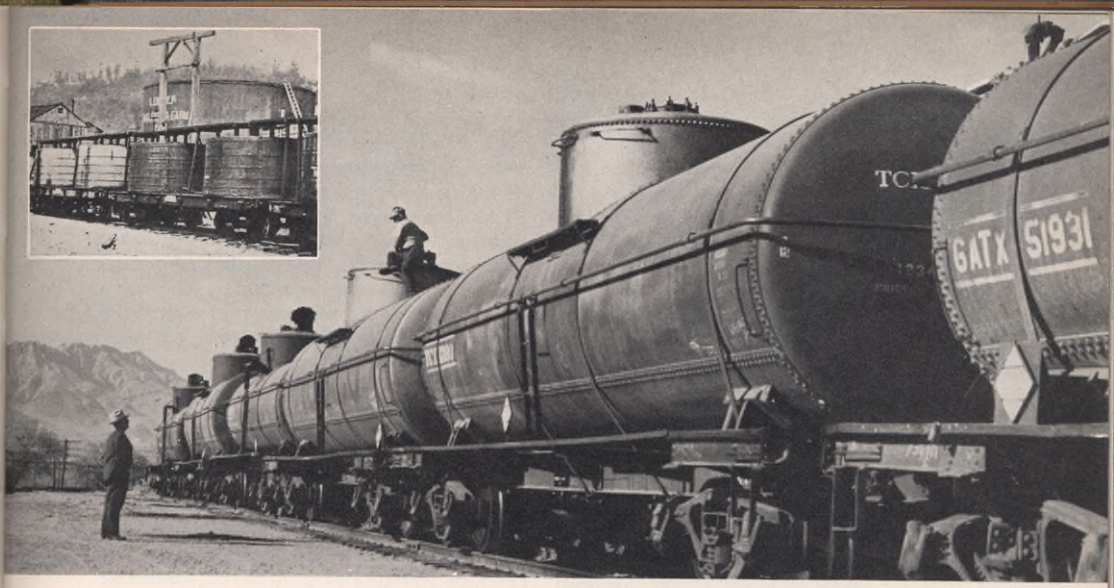
"A raw material from which . . . they may manufacture very valuable products . . . nearly the *whole* of the raw product may be manufactured without waste," the report stated. In addition to illuminating oil, the crude would also yield gas, paraffin, and lubricating oils. A valuable find, indeed.

The report interested new capital. Bissell's own account of ensuing events provides a good summary of what happened next:

"*This report excited attention in New Haven, and some gentlemen in that city proposed to take an interest in our company on condition that it should be reorganized in New Haven. This was done, Professor Silliman being elected the first president. The work of trenching the lands was continued until 1858, when . . . the company then determined to sink an artesian well, and concluded a contract with some of its members, the condition of which was that the company should receive twelve cents per gallon for all oil raised from their land, the lessees to pay all expenses for future developments. The lessees employed one of their number, Mr. E. L. Drake, as superintendent, and furnished him with the necessary capital.*"

Drake, a retired railroad conductor, owned a railroad pass which permitted him free rail travel. He made several trips to Titusville and, after a series of difficulties, was able to employ William A. ("Uncle Billy") Smith, an experienced salt-well driller, to drill for oil along the Watson flats on Oil Creek outside Titusville in Venango County.

Smith made his own tools and was a pretty smart hand mechanically. Under Drake's supervision, he drilled patiently. Before long, people thereabouts dusted off the historic horselaugh reserved by the yokel intelligence for adventurous initiative and called the deepening hole "Drake's Folly." And



TRANSPORTATION has been a vital phase of petroleum industry operations from the early days. Inset shows makeshift conveyances that originally carried oil by rail. Today, the industry uses railroad tank cars (such as above) as well as pipe lines, barges, seagoing tankers, and tank trucks to move both crude oil and finished petroleum products

"Mr." Drake became known as "Colonel" Drake to Oil Creek folks, no doubt because of his top hat and reserved demeanor.

On August 27, 1859, Uncle Billy struck oil. The well had been drilled to a depth of 69 and one-half feet. A dream had come true.

The "colonel" had persisted when things looked very bleak. The well itself was by no means a great producer. "The well produced oil for six or eight months, but it never exceeded four hundred gallons per day. I think the production ceased in about eight or nine months," Bissell related. But it was important. And Drake *did* supervise to its historic conclusion the drilling of the world's first commercial oil well.

Titusville, a little lumber community, became a bustling oil frontier town overnight in a boom-town pattern that was to be relived hundreds of times around the country in the story of American petroleum.

THE YEARS BETWEEN

The aim: improve and serve

THE time is 1902.

The petroleum "industry" is 43 years old and is just swinging into high gear. Every day, all over the world, the market for Drake's "black gold" is growing. Oil is a mushrooming business with plenty of room for intelligent enterprise.

It is the beginning of a century that promises the fulfillment of many expectations. The nation is still expanding. There are 45 states and the country is very self-conscious of its greatness and its possibilities.

It is a time of rapid developments . . . of new inventions, of boundless faith in the future.

In Dayton, Ohio, two young mechanics are wrestling with the aerodynamics of wing design. They hope to fly the airplane they are building. (They did by 1903, and Kitty Hawk became the Titusville of aviation.)

Another young mechanic, Henry Ford, is building racing automobiles and is on the verge of turning out passenger cars. (By 1903 the first "Tin Lizzies" were on the market. Ford matched the Wright brothers' conquest of the air by revolutionizing man's personal transportation on land. This revolution in transportation created a demand for gasoline which has grown steadily greater over the years.)

The oil business has long since fled the confines of the Watson flats and Oil Creek and Titusville.

By now, pioneer oil men have drilled for and found oil in Ohio, Illinois, Kansas, Colorado, Oklahoma, Wyoming, Texas, and California.

The machine age has rolled into American life. It brings with it a tremendous stimulus to men of

vision who are out discovering America's crude oil reserves.

Of course Mrs. Andrews churning butter by hand in Iowa, isn't aware that the machine age is at hand. Neither is Doc Murphy, who visits his Texas patients on horseback. Or Farmer Morrow in Ohio, who tills and toils with horsepower (the four-legged variety).

But in only a few years their lives, and the lives of all Americans, will be profoundly changed by two significant American natural resources: petroleum, and the native enterprise of men who possess the quality of daring which stands at the heart of progress.

From its beginning the petroleum industry has been the working partner of machine progress, especially the progress symbolized by the automobile, which uses the industry's principal product—gasoline—as fuel.

In its growth from humble beginnings, The Texas Company reveals the petroleum industry's history of steady progress.

When J. S. Cullinan and his associates founded The Texas Company in the shadow of the fabulous Spindle Top gusher near Beaumont, Texas, in 1902, he and his associates adopted broad policies which immediately set the pace for Texaco's progress.

For example, by 1905, The Texas Company was marketing its products in Europe after securing a firm foothold in important domestic markets. Carefully and thoroughly, The Texas Company developed its producing, transportation, refining, and marketing facilities.

The Company's enormous catalytic cracking units at Port Arthur Works, Lockport Works, Los Angeles Works, and other Texaco refineries are the grandchildren of the simple shell stills which were used to make the Company's first products at Texaco's first refinery at Port Arthur, Texas.

During the years of its growth to its present position as one of the leading petroleum concerns in the nation and the world, Texaco went to market wherever the market was to be found. Nationally, this enterprise brought Texaco products for motorists and industries into every state.

From the outset, the men responsible for The Texas Company's policies and operations put research to work to find better ways to locate and produce crude oil and more efficient ways to refine it and distribute finished products. Texaco's goal has always been more and finer petroleum products to meet the constantly growing demands of America for fuels, lubricants, and chemical by-products of petroleum.

In each phase of its operations, Texaco reflects the efforts and the progress of the oil industry. Today's supertankers and networks of pipe lines for crude oil and refined products, for instance, reveal in their design and efficiency the basic compulsion of oil management to improve . . . and improve.

In two world wars, Texaco, together with other oil companies and individuals comprising the industry, has served the nation well in fueling and lubricating the forces which have preserved our democracy.

Texaco's years of growth and progress thus summarize the petroleum industry's great tradition of four score and 10 years—*improve and serve.*

1949

Returning the public's faith

THE most fanciful dreams of the oil pioneers at Titusville would pale before the immensities of today's petroleum industry.

If "Uncle Billy" Smith, the old brine-well digger, could watch a modern drill crew "making hole" more than three miles below the earth's surface he probably wouldn't dare to believe it.

The hole that Uncle Billy drilled beside Oil Creek really started something. He never reckoned that in the next 90 years oil men would drill more than 1,250,000 wells in this country.

His boss, "Colonel" Drake, had an agreement that Smith would drill "1,000 feet of straight hole." What would Drake have said if he'd known that his contract with Uncle Billy started a 90-year chapter in drilling which resulted in an estimated 2,500,000,000 (that's right, two *billion*) feet of holes?

Even the sanguine and persistent Drake could never have dreamed that his historic well would go through the earth 60 times!

Today, there are 26 states producing oil and gas. (Once, the horizons of the oil-producing world were the pine- and sycamore-covered hills which hemmed in the broad flats along Oil Creek.)

Petroleum and its derivatives now enter into the manufacture of more than 1,200 items that the modern American has at his (and her) beck and call for everyday use.

The farmer plows more earth, harvests more crops, and gets more work done in a day than his granddaddy could manage in a week. Oil is his silent helper—it fuels and lubricates his mechanical "hired hands."

Milady's cosmetics, nylons, shower cap—almost anything she puts her hand on around the house—are made in part with ingredients that the petroleum

industry has obtained from crude oil buried in vast treasure houses beneath the American earth.

Those first wagons that carted crude oil from Oil Creek into Titusville in 50-gallon, open wooden barrels had such a rough ride that much oil slopped out. It was estimated that the average loss per barrel was eight gallons. Thus the 42-gallon oil barrel—the industry's statistical yardstick—was established by the accident of short measure.

Today, crude oil and refined products of the petroleum industry move to refineries and to markets by pipe lines, railroad tank cars, tankships, barges, and tank trucks—and there is no slopping over.

The first pipe line was a five-mile-long affair. Now there are more than 150,000 miles of pipe lines in the United States carrying crude oil and refined products. There are about 110,000 railroad tank cars in oil service and a fleet of more than 100,000 tank trucks.

But that's only part of the story of oil in 1949.

"Colonel" Drake had a limited amount of capital to draw upon in drilling his famous well. He'd gasp at the amount of money currently invested in the petroleum industry in the United States alone. Experts put the figure at $21,700,000,000.

That figure can be analyzed in many ways, but basically it says one thing: the industry is a sound investment, in the opinion of Americans. The industry has served the public well and has returned the public's faith in its success.

Once gasoline was thrown away as a useless by-product of the manufacture of illuminating oil in the pre-automobile days. Today, all of the crude stock is utilized by the industry. Modern refining is a science based on amazingly complex calculations. Those huge structures that stand as high as 25 stories and look like streamlined cauldrons yield different "fractions" of oil with great exactness.

That desire to keep improving is the secret behind America's superior supply of high-octane aviation fuel during World War II.

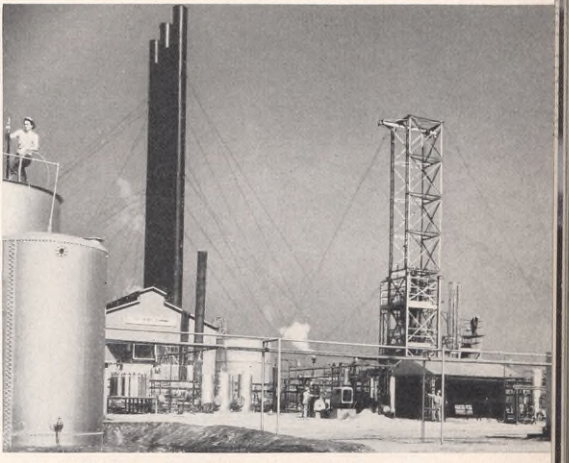
Wherever you drive today, you take along an unseen passenger—*progress*.

For 90 years oil has progressed and it has helped stimulate progress in other industries.

As someone once said, Drake shook the tree and down came the fruit. For almost a century, the oil industry has turned this bounty to good use. It took the oil, added initiative and skill, and helped to improve the American standard of living. That standard is the highest in the world today.

The giant energies that Drake released at Titusville stand ready to serve the democracy that nurtured their steady growth.

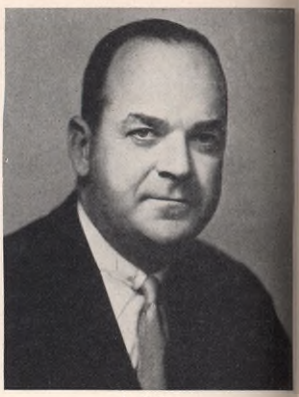
MORE than half the nation's states now produce oil and gas. (Above) This is a "tank battery" in New Mexico



RESEARCH has made production of synthetic oil possible. (Above) A Texaco pilot plant that makes synthetics

R. Ogarrio

R. F. Baker



A. C. Long

Three New Vice Presidents Elected by Texaco's Board

Other Promotions Announced

THE Board of Directors of the Company has elected three new Vice Presidents, a new Treasurer, and established an Executive Producing Committee.

R. Ogarrio, Vice President and formerly in charge of the Domestic Producing Department, has been named Chairman of the new Executive Producing Committee. He is also a Director of the Company.

R. F. Baker, formerly General Manager of the Domestic Producing Department, has been elected Vice President in charge of Domestic Producing to succeed Mr. Ogarrio.

A. C. Long, formerly Assistant to the Chairman of the Board, has been elected Vice President, Foreign Operations Departments (Eastern Hemisphere).

L. H. Lindeman, formerly Treasurer, has been elected Vice President, Finance and Economics.

Robert Fisher, formerly Assistant Treasurer, has been elected Treasurer.

The Executive Producing Committee will consider crude oil production policy on a world-wide basis. In addition to Mr. Ogarrio, the Chairman, the Committee members are: Mr. Baker, Vice Chairman; Mr. Long, and C. E. Olmsted, Vice President, Foreign Operations Departments (Western Hemisphere and West Africa).

J. H. Pipkin, Assistant to the President since 1944, has been named as Assistant to the Chairman of the Board, and J. T. Wood, Jr., formerly Division Manager, Pacific Coast Division of the Domestic Producing Department, has been made Assistant to the President. E. R. Filley, formerly Manager, Domestic Producing Department, has been promoted to General Manager of that Department.

R. Ogarrio attended Massachusetts Institute of Technology and was graduated from Sheffield Scientific School, Yale University, in 1908. He was engaged in civil engineering in Mexico City until October, 1916, when he joined The Texas Company of Mexico at Tampico as an Engineer. Mr. Ogarrio advanced to General Superintendent at Tampico, was made Manager of Texas Petroleum Company in Venezuela, and later became Assistant to the Vice President and General Manager of The Texas Company's Producing Department. He was elected Vice President in 1928 and a Director in 1931.

R. F. Baker was graduated from Sheffield Scientific School, Yale University, in 1912. From 1913 through 1916, he did graduate work in geology at Yale. He came to work for The Texas Company as a

L. H. Lindeman

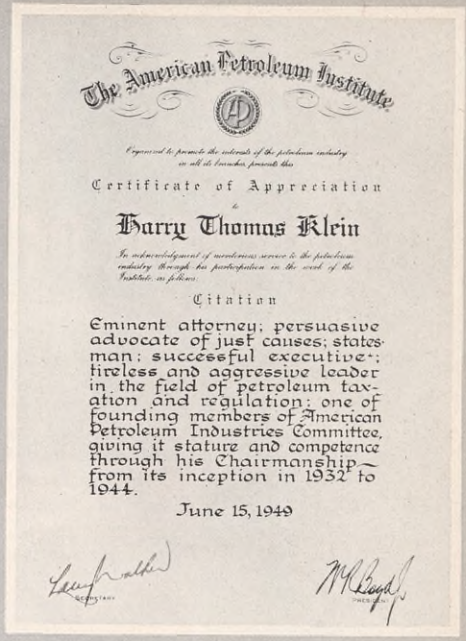
Robert Fisher

Geologist at Tulsa, Oklahoma, in 1916. Mr. Baker served in the Infantry in World War I, returned to Texaco in 1919, and became Chief Geologist of the Company in 1920. In 1933 he was made Assistant to Vice President and two years ago was named General Manager of the Domestic Producing Department.

A. C. Long, a native of Florida, was graduated from the Naval Academy at Annapolis in 1926. After four years with the Navy, he joined Texaco in 1930 and served in various capacities in foreign and domestic operations. During World War II, Mr. Long served the State Department as petroleum attaché in London. In June, 1946, he was named Assistant to the Vice President in charge of Foreign Operations. He was elected a vice president of California Texas Oil Company, Limited, in 1947, and was appointed Assistant to the Chairman of the Board of The Texas Company in November, 1948.

L. H. Lindeman is a native of Brooklyn, New York. He joined The Texas Company almost 40 years ago as a Stenographer in the Company's Credit Department. Mr. Lindeman has held various positions in the Treasury Department, including those of Assistant Creditman, Cashier, and Cashier and General Assistant. On July 1, 1919, he was appointed Assistant Treasurer, handling domestic and foreign banking matters. Ten years ago Mr. Lindeman was elected Treasurer of The Texas Company.

Robert Fisher was born in New York City. He started to work for The Texas Company as a Hall Boy in 1910 and became, successively, Office Boy, Bank Messenger, Assistant Cashier, Credit Clerk, Cashier, Secretary to the Treasurer, Assistant Treasurer, Assistant Secretary and Assistant Treasurer in charge of the Stock Transfer Division, and Assistant Treasurer in charge of the Banking Division.



The American Petroleum Institute

Organized to promote the interests of the petroleum industry in all its branches, presents this

Certificate of Appreciation

to

Harry Thomas Klein

In acknowledgment of meritorious service to the petroleum industry through his participation in the work of the Institute, as follows:

Citation

Eminent attorney; persuasive advocate of just causes; statesman; successful executive; tireless and aggressive leader in the field of petroleum taxation and regulation; one of founding members of American Petroleum Industries Committee, giving it stature and competence through his Chairmanship — from its inception in 1932 to 1944.

June 15, 1949

TEXACO'S PRESIDENT HONORED BY A.P.I.C.

On June 29, at a luncheon attended by members of the American Petroleum Industries Committee of the American Petroleum Institute, Texaco's President, Harry T. Klein, was presented with the Certificate of Appreciation reproduced above. The award was made by William R. Boyd, Jr., president of the A.P.I., on the recommendation of the Committee and was "in acknowledgment of meritorious service to the petroleum industry through his participation in the work of the Institute."

Mr. Klein served as chairman of the A.P.I.C. from its formation in 1932 until 1944. Presently serving as chairman of the Committee is Oscar John Dorwin, General Counsel of the Company and an A.P.I.C. member since 1944, who was elected to the important post last June.

The A.P.I.C. strives to encourage reason and justice in taxes and regulations affecting the petroleum industry and its customers. The activities of its organization of state, county, district, and city committees are patterned on the democratic principle of the right of petition as seen in original American town meetings. They follow the democratic procedure of encouraging citizens and taxpayers to take an interest in the taxing and spending policies of their nation, states, and communities and to express approval or disapproval of these policies to their representatives.

BARREL OF PLENTY

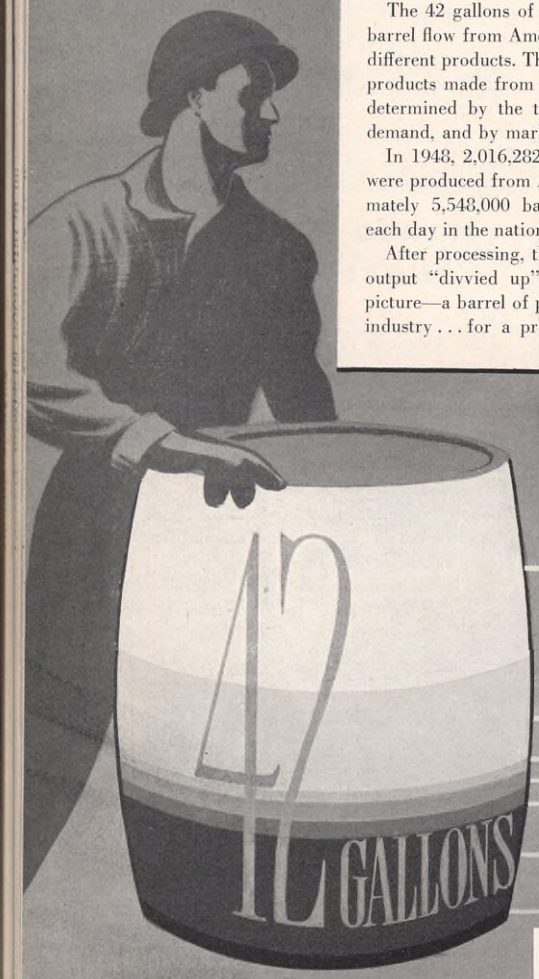
DRAIN one barrel of crude oil from America's annual production of more than 2,000,000,000 barrels, and you've deducted only a drop.

Dispense the products of that barrel to American consumers, and you've added measurably to the abundance of their lives.

The 42 gallons of crude oil that compose a barrel flow from America's refineries as many different products. The kind and proportion of products made from any batch of crude oil is determined by the type of crude, by public demand, and by market requirements.

In 1943, 2,016,282,000 barrels of crude oil were produced from American wells. Approximately 5,548,000 barrels were run to stills each day in the nation's refineries.

After processing, the average barrel of that output "divvied up" like the barrel in our picture—a barrel of plenty from a progressive industry . . . for a progressive America.



GASOLINE—17 GALLONS

HEATING OIL—8 GALLONS

TRACTOR FUEL—.6 GALLONS

DIESEL FUEL—1.7 GALLONS

LUBRICANTS—1.1 GALLONS

RESIDUAL FUEL OIL—9.7 GALLONS

ASPHALT AND ROAD OILS—1.2 GALLONS

BY-PRODUCTS—2.7 GALLONS

AND MANY OTHER THINGS—By-products are produced all along the line in modern refining. Today, petroleum and its derivatives go into the manufacture of more than 1,200 items in everyday use

FOR TRAVEL—Enough gasoline to operate a popular make car for 150 miles. American motorists used 30,700,000,000 gallons in 1948

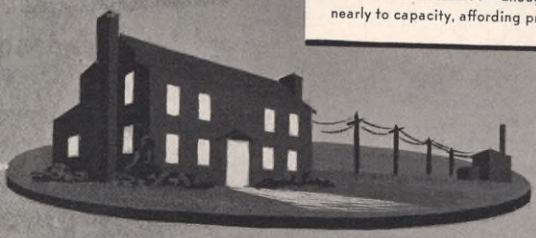
STAR CLOSE-UPS

FOR COMFORT—Enough heating oil to provide average home with adequate supply of heat and hot water for more than 2 days

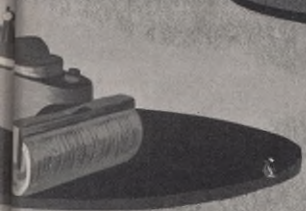
FOR CROPS—Enough fuel to run a tractor for 18 minutes. The mechanized farmer is 30 times as productive as 1830 forebear

FOR PUBLIC TRANSIT—Enough fuel to power a large bus for 11.9 miles. Buses are chief mass transport in smaller U. S. cities

FOR DEPENDABILITY—Enough oil to fill an auto's crankcase nearly to capacity, affording protection from expensive breakdowns

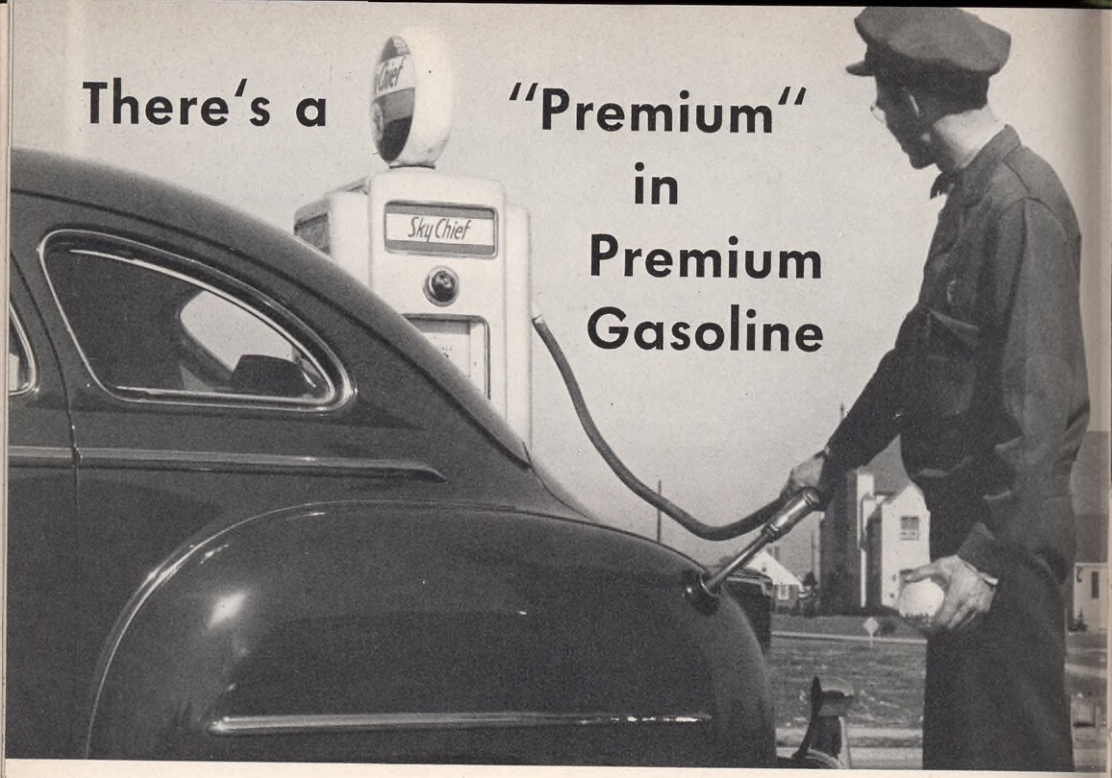


FOR LIGHT—Enough fuel, when converted to electricity, to furnish the average home with electric light and power for 20 days



FOR THE ROAD—Enough asphalt to surface four square yards of private driveway with a waterproof and dustless asphalt coating

There's a "Premium" in Premium Gasoline



By MICHAEL HALPERN

Vice President in charge of the Refining Department

Americans have a penchant for the best. Premium gasoline, like Texaco Sky Chief, gives Americans a "best" in motor fuel

GRADE A, *choice, de luxe, finest, premium*—these are some of the familiar designations that guide shoppers who want the best their money will buy, whether it be meat, eggs, or gasoline.

There is one fundamental reason why we buy the premium grade of any product: we know from experience gained in using it, that the premium grade tastes better, lasts longer, does a better job for us, gives us superior benefits in some form or manner.

Premium gasoline, favorite of millions of American car owners, is a typical case in point. Texaco's premium-grade gasoline, Sky Chief, is a good example. By using Sky Chief, many motorists have found that their cars start easier, warm up quicker, accelerate faster, have greater freedom from vapor lock—besides being freer from engine knock.

These "plus" characteristics of Texaco Sky Chief Gasoline not only result in better performance, which many drivers recognize, but also bring about definite savings in gasoline consumption that become appreciable especially where considerable "stop-and-go" driving is done.

Texaco's Sky Chief Gasoline is not a premium motor fuel in name only—it delivers better performance because of inherent qualities in its components. The "premium" in Sky Chief is *built in* and is the result of years of research and experience in manufacturing gasoline. Sky Chief is designed for "those who want the best," and it delivers the best to those who buy it.

In the original development of Sky Chief Gasoline, Texaco made a special effort to establish the standards of gasoline quality that would provide the best possible performance. It was soon found that a single gasoline specification could be drawn

up to give premium performance for most of the cars in operation for a given season of the year in a limited geographical area. Variations in geographical areas and climatic changes, however, required that provision be made for these factors.

Taking an extreme example, a gasoline which would give optimum performance in Texas during the Summer would be a poor selection for Winter operation in New York. As a basis for establishing the proper requirements for gasoline to be used in different parts of the country, Texaco engineers secured weather records covering a period of more than 40 years from weather stations all over the nation.

A comprehensive study of the weather records revealed that the country could be divided into 25 areas. In each area, climatic conditions and altitude were sufficiently similar to permit coverage by a single set of gasoline specifications during a given season of the year.

Seasonal variations in these areas, it was found, could readily be taken care of by providing Summer, Fall, Winter, and Spring grades of gasoline.

The "40 Years of Weather" study, however, was just part of the broad study given this problem. Other Texaco scientists concentrated on determining the effect of various changes in temperature and altitude on the kind of gasoline needed to give the best performance in the majority of automobiles in use.

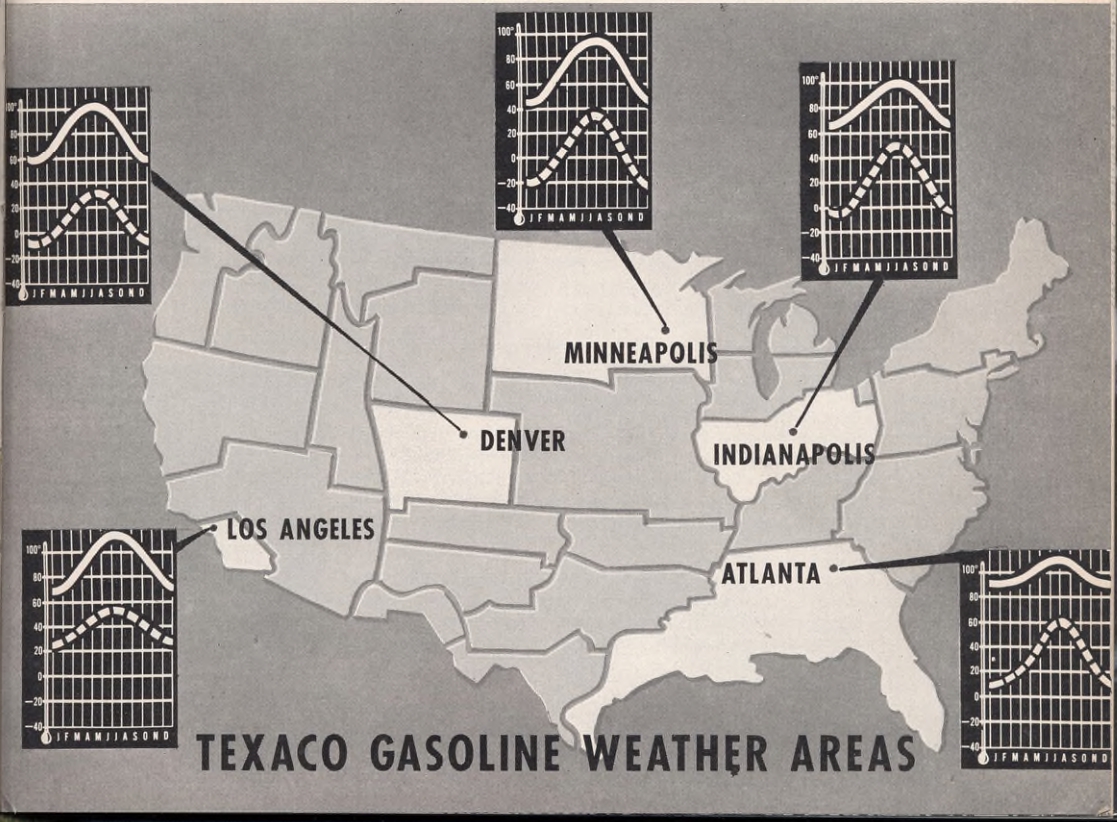
Many interesting facts were learned. For instance, appreciable changes could be made in the time required for starting an engine by changing the amount of lower-boiling material in the gasoline.

It was determined that while enough light material could be added to get satisfactorily quick starts, care had to be exercised to avoid engine stoppage from vapor lock, which occurs if too much light material is used.

It was found that by properly balancing the constituents used for the mid-boiling-range fractions of the fuel, quicker warm-ups after starting and quicker acceleration are obtained.

By applying the temperature and altitude data determined for each of the areas for the four seasons of the year to the car performance data, it was

FORTY YEARS of weather records were studied by Texaco experts before establishing the 25 gasoline weather areas shown below. Each area presents a different problem in weather, temperatures, altitudes. Texaco Sky Chief Gasoline is designed to "match the weather" in each area. Graphs depict the average monthly high and low temperatures at points in five areas



MAKING premium gasoline calls for refining facilities such as "cat" cracker (right) at Texaco's Lockport Works

possible to draw up specifications for gasoline that would give the best performance in each of the 25 areas. The manufacture of Texaco Sky Chief Gasoline has been based on these specifications.

It is interesting to note that although several studies of climatic information have been made since the original data were established, there has not been enough change to justify any revision in the basic information. On the other hand, automobile engine designs have been changed a number of times and suitable adjustments have been made in the specifications to provide for these changes.

Another important factor in premium gasoline is the matter of octane numbers. Do only a few cars, as is contended in some quarters, require the high octane quality in premium gasoline?

The facts give the answer.

It would, of course, be correct to state that only a few cars require the high octane quality in premium gasoline *based on average operation of the average of all cars in a new condition.* However, this statement is so qualified as to be of little value in arriving at an answer to the above question.

The facts are that octane requirements of cars of the same make and model after a period of use vary over a wide range. These variations may be due to inherent differences in manufacture or to differences induced by deposit formations in the combustion zone. Further, knocking generally occurs during the application of load, and a driver who does much stop-and-go driving or considerable hill climbing is much more likely to encounter engine knocking than the driver who operates his car at high speeds in flat country for extended periods.

The point is that many drivers have discovered that to get away from the annoying clatter of a knocking engine it is necessary for them to use premium fuels, even though the theoretical octane requirement of the make and model of car they are driving would not indicate this to be so.

In continuing to purchase premium gasoline the motorist is probably influenced, without realizing it, by the other "plus" characteristics he gets in this way.

Developing the specifications for premium gasoline was only a part of the problem of making such fuel available to the American motoring public. A great deal of effort was involved in arranging for the manufacture and distribution of Sky Chief Gasoline in the proper seasonal grades to the 25 areas in the country. The Texas Company has been able to do this with great success since Sky Chief Gasoline was first introduced in 1939.

Special refining processes are needed to create the proper combination of volatility and anti-knock requirements of Sky Chief. These processes include stabilization, alkylation, polymerization, catalytic cracking, reforming, and other intricate processes. Blending facilities must be provided to handle the careful compounding of the components used to meet the rigid specifications set for each blend.

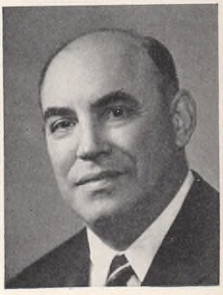
In certain instances it is necessary that blending stocks be exchanged between various refineries operated by the Company in order to provide the proper balance in the quality of the gasoline marketed. To provide for the higher-quality level represented by

---

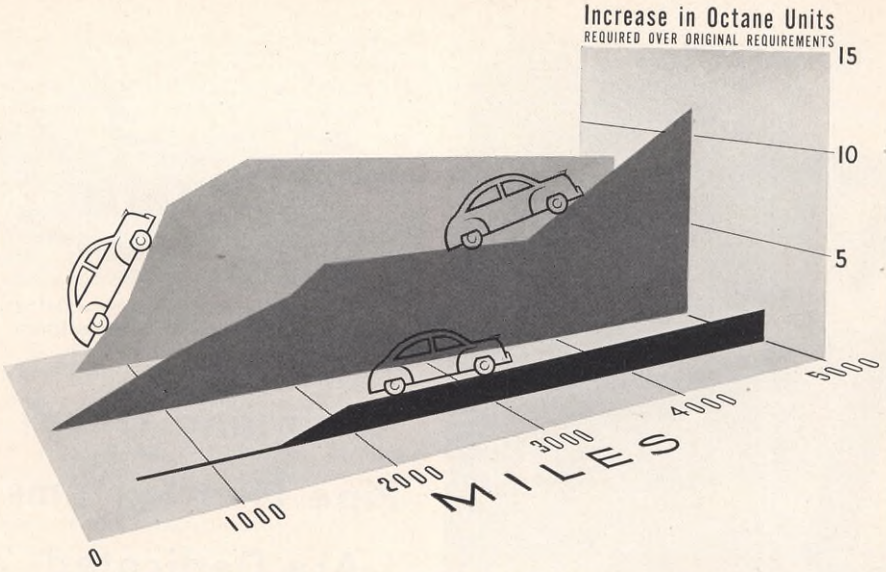
MICHAEL HALPERN brought to the writing of *There's a "Premium" in Premium Gasoline* more than 30 years of petroleum industry experience. He joined The Texas Company in June, 1916, as Assistant Civil Engineer at Bayonne Terminal, New Jersey. In October, 1925, he was sent to Texas as Port Neches Works Superintendent.

After five years of service in Texas, Mr. Halpern was transferred to New York to become Assistant Manager of the Refining Department. From April, 1931, until October, 1933, he also was Director of Research. In 1937, he was appointed Manager of Manufacturing and in 1938 was made General Manager of the Refining Department. Mr. Halpern was named Vice President on September 27, 1940, and was elected a Director of the Company on February 8, 1946.

During the recent war, Mr. Halpern (known as "Mike" to associates) directed the forging of the Company's refining units into improved instruments of supply. Since the war's end, he has been instrumental in the conception and execution of plans for increased refining capacity of most up-to-date design. An advocate of progressive research programs, he has figured prominently in the expansion of Beacon Laboratories.



Michael Halpern



OCTANE REQUIREMENTS of cars of same make and model after a period of use vary over a wide range. Increased requirements of three 1948-1949 cars are illustrated above. Many cars need the extra measure of octane units that premium gasoline, such as Sky Chief, supplies

the premium stocks it is necessary to use the best of the materials available. These materials are expensive to produce and to prepare, by suitable treating procedures, for their ultimate use in Sky Chief Gasoline.

Besides the complex problems involved in the manufacture of the components and in their treatment and compounding, there are the intricate details of controlling the shipments to the various distribution points to assure the proper product being at the right place at the correct time of the year. This calls for careful regulation of manufacturing schedules and close control of stocks in the field so that there are no large volumes in storage at times of change from one seasonal grade to another.

Many car owners can personally recall the evolution of the automobile from the rough-riding, noisy, and unreliable machine of the early century into the beautiful cars of today. The engineering skill represented by this evolution is enormous, but without an equal skill on the part of the oil refiner in providing ever-better fuels and lubricants, the operation of such mechanical marvels would not be possible. The automotive industry and the petroleum industry have grown up together, and the research and development work carried on by each has provided mutual assistance in the creation of today's fine cars and motor fuels.

Because of extra costs in manufacturing and treating the special ingredients used in Sky Chief Gasoline, and in distributing and marketing the correct fuel for each of the 25 areas in the country, Sky Chief is sold at a premium price.

The average motorist uses about 650 gallons of gasoline a year. Assuming that he pays two cents a gallon more for premium gasoline than he does for regular, this means a difference of $13 a year. For this sum the average motorist receives definite economies in the operation of his car, in addition to the satisfaction of getting better car performance.

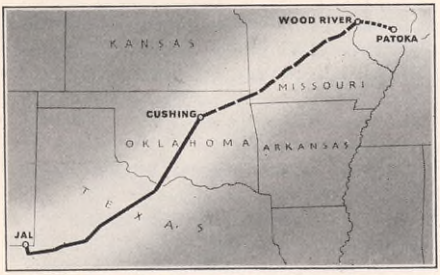
There *is* a premium in premium gasoline—and the premium is one that benefits the motorist. Americans have a penchant for the best. Premium gasoline, such as Texaco Sky Chief Gasoline, gives American motorists a "best" in gasoline. And it is a "best" that will be made even better in the future.

TESTS on road and in laboratories bring improvements in Texaco gasolines. (Below) Checking a Texaco test fleet

STRINGING them along surveyed route, "side boom cats" maneuver Basin-Ozark pipe sections into place

MODERN DESIGN weds beauty to utility at Cushing pump station, hub of Basin and Ozark Pipe Line Systems

Basin and Ozark Pipe Line Systems Are Dedicated

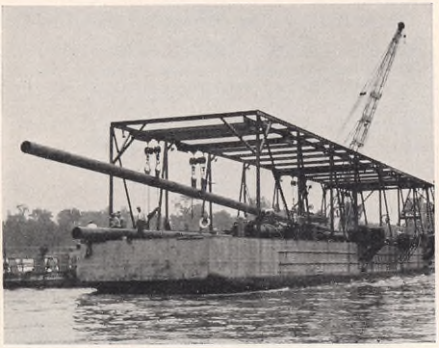


ROUTE of the Basin and Ozark Pipe Line Systems

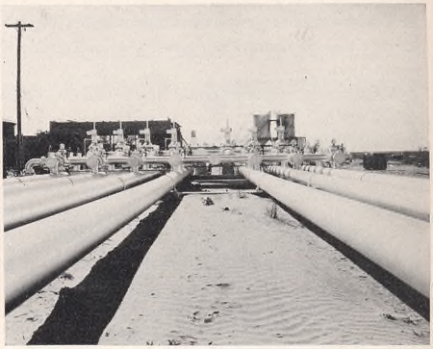
THE Basin and Ozark Pipe Line Systems—coupled to form the largest, longest, heaviest-carrying crude oil pipe line ever built by private enterprise in America—were dedicated July 12, 1949, at Cushing, Oklahoma.

Delivering the dedicatory address, Walter S. Hallanan, chairman of the National Petroleum Council, called the two systems a "vital link in the most dynamic economy the world has ever known."

Joint projects of four petroleum companies working without Government subsidies of any kind, the two lines together stretch all the way from New



ONE MORE RIVER to cross in a series of 14 was the Mississippi—spanned with a barge-type pipe-laying unit



ON THE MARK at Jal. From this New Mexico pumping station, Permian crude starts its long run to Midwest

Mexico to Illinois. They span 1,000 miles of American heartland to provide additional economic transportation for crude oil from the rich Permian Basin of New Mexico and West Texas to the refining centers of the Midwest.

The Basin Pipe Line System from Jal, New Mexico, to Cushing, Oklahoma, started moving Permian Basin crude in mid-July of 1948. It was built by The Texas Pipe Line Company (a wholly-owned subsidiary of The Texas Company) and is owned by that company, Shell Pipe Line Corporation, Sinclair Refining Company, and Empire Pipeline Company.

With a designed capacity of 241,000 barrels daily, the Basin System carries crude 515 miles through 20-, 22-, and 24-inch pipe to Cushing, where the oil will now continue its eastward flow in the Ozark Pipe Line System.

Running 487 miles to Wood River and Patoka, Illinois, the Ozark System passes crude through 22-inch pipe that has an ultimate capacity of 260,000 barrels daily. At Patoka, the line connects with existing facilities of The Texas Pipe Line Company and The Texas-Empire Pipe Line Company (a Texaco affiliate).

The Ozark System was built by The Shell Pipe Line Corporation and is owned by the builder and The Texas Pipe Line Company—except for the 54-mile extension from Wood River to Patoka, which is solely owned by The Texas Pipe Line Company.

Now that the systems have been placed in operation, each carrier handles its own business in its own name. The terms Basin and Ozark serve merely to identify the projects.

The two systems, said Mr. Hallanan at Cushing, are "another monument to the free and adventurous spirit that has made our country the richest and most powerful nation on earth."

ROLLING their own, pipeliners truck pipe sections up a grade on the way from the railroad siding to location

WRAPPING it up after cleaning and coating, pipeliners lower pipe into ditch, then backfill to cover the line

URGING it on at Midland, Texas, this pumping station pushes the crude along the line to many refineries

RACING engines hurry trainloads of new pipe from the mills to railroad sidings all along the pipe line route

BIGNESS IN BUSINESS

By DR. GEORGE S. BENSON
President, Harding College

To understand the key to American prosperity, Dr. Benson believes, we must understand that bigness in business brings us benefits

GREAT forests, spacious harbors, ample inland waterways, wide prairies, and vast deposits of minerals were among the rich natural endowments of this land when George Washington became the nation's first President, 160 years ago.

Despite these natural resources, however, people generally were poor. Wages were low, work days were long.

Fostered by a Government that wisely permitted great individual freedom, a maze of small businesses came into being in the new nation. Profits were liberally plowed back into better plants and better tools. Competition for business—there was nothing to stop others from following the industrial trail blazers and competing with them—placed a premium on efficiency in management.

In the beginning, America had nothing but small industries. Working capital was limited, crude methods prevailed, and manufactured articles were produced on a limited scale.

Gradually, industrial plants grew as men succeeded in accumulating sufficient capital with which to expand their enterprises. The steam engine, the railroad locomotive, the cotton gin, the harvester, the electric light, the automobile, and the airplane are just a few of the countless products of industrial ingenuity brought forth by American business in the years since our first President.

Today—as a result of mass production techniques that have lowered consumer prices—automobiles, radios, telephones, refrigerators, and many other necessities as well as luxuries are within the economic reach of the general public.

Popular prices proved to be a powerful stimulant that caused industries to grow larger and larger. This growth produced more and more goods and services for Americans and helped raise Americans' standard of living higher than the standard of living in any other nation.

To the man in the street, our larger industrial concerns—individually and collectively—are "big business." Not only at home, but all over the world, America stands for "big business."

Having seen businesses grow big because of public demand for their products, it is natural now to ask: *Are these businesses too big? Is it to our best interests to have such big companies?*

Based on a study of our own economic system, and after studying and observing economic conditions in 20 foreign countries, I would like to answer these questions emphatically by saying that big business is the very key to American prosperity. Without big business we could not have an annual spending power equal to that of the next highest six countries combined. Without big business we could not possibly have won World War II.

Dr. George S. Benson

RECORDING impressions of Dr. George S. Benson for readers of *The Saturday Evening Post*, writer Philip Rose said, ". . . here is a man who is sound and good to the core. He is basic American. He draws inspiration from the founding fathers of the Republic, from the truths of history, and from the Bible."

The nation-wide appeal of Dr. Benson's writings and addresses is well defined by that tribute. The 25,000,000 people he reaches regularly from the press, radio, motion pictures, and lecture platform, value his opinions for their common sense and forthright integrity.

Dr. Benson was born on an Oklahoma farm. After graduation from college, he spent 11 years in the Orient and Europe where he engaged in economic studies. He has served as president of Harding College since 1936. Under his leadership the Searcy, Arkansas, school has become known as the college with a "coast-to-coast campus." His program of activity is extremely varied, and he has come to feel equally at home visiting the college farm, speaking to a Madison Square Garden mass meeting, teaching a small Bible class, or dictating to his secretary in the cabin of an air-borne plane.

Without big business America could not now have more young people in high schools and colleges than does all the rest of the world combined. Without big business American workers could not now be enjoying—from their wages—purchasing power in food, clothing, housing, travel, and entertainment three times as great as in any European country.

Today, big business is under attack. The attack seems to be directed at bigness in business as such.

Big business is not the villain that those in some quarters would have us believe. Surely, there are benefits to the public in the assets of big business. For example:

Big business leads in safety for workers. Steel, textiles, automobiles, chemicals, petroleum—all of which are classed as big business—were far below the national average of 13.26 disabling injuries per million man hours during 1947.

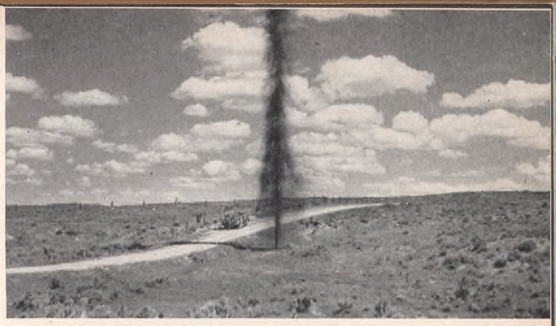
Big business is a most important customer for small business. General Motors, for instance, buys materials, parts, and supplies from 12,000 small businesses. Furthermore, it is estimated that there are about 1,300,000 people employed in automobile sales and service businesses, which are small in size.

Big business benefits the public. Only big business with its capital reserves can develop economically such natural resources as crude oil and iron ore and convert these natural resources into usable products. Dividends in the form of better products at lower prices, making possible the marvelously high American standard of living, mean that the public actually is the greatest benefactor of big business.

Big business is good for small business. In 1870, America had 427,000 independent commercial and industrial enterprises, which equaled one for each 91 persons. In 1947, America had 2,280,000 businesses, or one for each 63 people. So—despite "big business"—we have a larger number of small businesses today, even in proportion to our population.

Big business is owned by the people. General Motors is one of our biggest corporations. Yet, no single individual holds more than 1.5 per cent of its outstanding common stock. It is the public that determines which businesses shall become big. Big business is nothing more than small business grown up, and a business can grow up only with the support and patronage of the general public.

Big business makes a tremendous contribution in research. Private industry spends millions of dollars each year to produce better products at lower prices. Many millions are also spent annually by



DEVELOPMENT of natural resources is economically possible with capital reserves of "big business." Explosion above is used in searching scientifically for oil

industry in pure research where thousands of scientists pursue experiments along lines at the moment unrelated to products their companies are presently producing. Only big business can afford research on such a scale.

The fundamental test of any human institution is how it exercises its stewardship—its talents, rights, and opportunities. Wherever and whenever it misuses or abuses its stewardship, it should be corrected and brought into line. But where it operates according to the rules of good living, it should be encouraged to serve men, at the level where it can give the best service, whether big or small.

Big corporations, being composed of human elements, make mistakes. So do small businesses and professional men. So does government. But the benefits big corporations bring to our American way of life far outweigh the disadvantages.

It is only realistic to note that now and then some corporation—it may be a big one *or* a little one—may pursue a course that is contrary to the public interest. When such a "bad actor" appears on the business scene, however, there are laws in our statute books to deal with the situation. The laws of the land assure that the ever-paramount interests of the public shall be protected and safeguarded.

There are, of course, certain bignesses that should give us concern. For instance, we do not want a Government so big that it will become the master of the people; or so grasping that it will seek to nationalize our industries, thereby reducing our production, our income, and our standard of living.

This nation's great private enterprise system has permitted the growth of big business where big business is needed to serve the people. If the American public will understand that bigness in business brings benefits, the key to American prosperity will be maintained.

GASOLINE TAXATION

(*Continued from Page 3*)

Probably no tax idea in history has ever caught on so fast or spread so rapidly as Oregon's pioneer levy on gasoline. Within about one decade, every state in the Union and the District of Columbia had a tax on gasoline—and in each case the original tax was imposed for the sole and exclusive purpose of financing highway development.

With the coming of the depression, all levels of government felt an acute need for more money just at the time when the taxpayers found it increasingly difficult to contribute more taxes. The result was that many of the states turned to the money they had pledged themselves to spend only for roads—the revenue from their taxes on gasoline. In these states this highway money was freely spent on any and all non-highway functions of government; in some states it seemed that even the little road-money spent for roads was grudgingly allotted.

At about the same time—1932—the Federal Government entered the field of gasoline taxation for the first time with a "temporary emergency" levy imposed to balance the budget. The Federal "temporary emergency" gasoline tax has been retained ever since and has even been increased by 50 per cent to its present rate of $.015 a gallon.

And so, in the Thirties, the petroleum industry and its highway-using customers saw the whole principle of the gasoline tax being undermined. Not only did the states divert gasoline and other highway-user tax revenue to non-highway purposes; not only did the Federal Government invade this field; but the states and their local units began imposing new and increased taxes on gasoline, on the theory that the motorist was the easiest of all marks for new taxation.

Recognizing the injustice of this situation and seeing the danger of such a trend, the petroleum industry and organized highway-users have sought restoration of the original principle of the gasoline tax and prevention of abuses of this principle which make that tax recklessly excessive. The struggle against the diversion of gasoline tax revenue to non-highway purposes has been measurably successful, and in most jurisdictions this practice has been virtually abolished. But other threats and unsound practices remain.

Anyone who is interested in the success of the petroleum industry and in the progress of highway transportation cannot fail to be alarmed by the present status of the gasoline tax. Today, in 50 representative American cities, this Federal, state, and local tax averages more than six and one-half cents on each gallon of gasoline. In these same cities, this tax is equivalent to 32 per cent of the retail price per gallon, exclusive of tax.

Figuring it another way, on the average, a dollar spent at a service station will buy only 76 cents' worth of gasoline. Taxes take the remaining 24 cents.

During the period covering 1920 to July, 1949, direct taxes on gasoline levied by local, state, and Federal governments have increased from an average of less than $.001 to $.066 per gallon. The State of Louisiana tops the list with a state tax of $.09 which, added to the Federal tax of $.015, makes a total tax of $.105 on each gallon of gasoline sold in that state.

In 1947 and 1948 the increase in the price of gasoline came about in direct response to an unprecedented demand for this product. The cry went up for the oil industry to produce, produce, produce. No question of cost was raised. The objective was to use every means to avert a dire shortage of gasoline and of other petroleum products. Even then it was not generally believed that the industry could solve the seemingly insuperable problems created by the tremendous demand for its products. As recently as the beginning of 1948 it appeared that there might be a continued and critical shortage of motor fuel.

But, the oil industry met this crisis squarely and overcame it. The Texas Company expended $235,000,000 in 1948 for capital investments and, it is estimated, will spend approximately $250,000,000 in 1949, or a total of $485,000,000 for these two years. Considering the sharp increase in the petroleum industry's production and operating costs, the increase in gasoline prices has been moderate indeed.

The largest single element in the motorist's cost of gasoline is taxes. The petroleum industry pays approximately 200 separate taxes on its properties and operations, and the brunt of this tax burden is borne either directly or indirectly by the users of gasoline.

While the price of gasoline is ultimately determined by competition, costs materially influence the level of competitive prices. The price of crude oil is a primary factor affecting the motorist's cost of gasoline. Although the average field price of Mid-

Continent crude increased 126 per cent between 1945 and June, 1949, during the same period the wholesale tank car price of gasoline (Oklahoma market) increased only 69 per cent, and the average service station price of gasoline, excluding tax, increased only 41 per cent. Thus, it is obvious that the increase in the price of gasoline since the war has not been in proportion to the increase in the price of crude during the same period.

The large increase in the cost of drilling wells over the past 10 years has been an important factor in increasing the cost of crude oil. Wells are now being drilled to much greater depths (one well has recently been drilled in the state of Wyoming to a depth of 20,521 feet in the search for oil). Material and labor costs have increased considerably more than the price of gasoline. The cost of producing a barrel of crude oil has increased approximately 100 per cent since 1941. There are a number of special taxes paid by the petroleum industry in connection with the drilling and production of crude oil. Not only are oil wells becoming more expensive to drill—it is becoming more difficult to find new oil fields.

Likewise, the cost of oil transportation by pipe lines, tank cars, trucks, and tankers has increased considerably in recent years, and special taxes are levied on these services.

Another important factor in connection with the cost of gasoline is the increased cost of making high-grade, quality product. The cost of refinery equipment has more than trebled in the past 20 years. A catalytic cracking unit, one of the major pieces of equipment in a modern refinery, costs approximately $13,000,000 for a 25,000-barrel unit. The need for catalytic cracking equipment in making high-octane gasoline, as well as the need for hydroforming, alkylation, and polymerization equipment, has considerably increased the cost of manufacturing high-grade gasoline in recent years. The use of additional tetraethyl lead to improve the quality of gasoline has also appreciably increased costs. Wage rates in all categories of the petroleum industry have advanced sharply in the last few years. According to the latest data published by the Bureau of Labor Statistics, petroleum refining workers are the highest paid workers in any manufacturing industry, with the exception only of newspaper and periodical workers.

The price of gasoline is also higher because of the increase in the dealer's spread between the cost at which he buys from the oil companies (generally the tank wagon price) and the price at which he sells to the consumer. The dealer's costs, in recent years, have increased in proportion to the costs of other small, independent businessmen. He must pay more for his labor and the material used by him in operating his station. For the two decades preceding World War II, the average cost of building service stations did not vary greatly, but since the war the average cost has increased about 150 per cent.

In spite of rapid increases in costs since before the war, the average service station price of gasoline, excluding tax, in 50 representative cities of the United States declined from $.297 per gallon in 1920 to $.204 in July, 1949, or 31 per cent. The wholesale tank car price in Oklahoma dropped 54 per cent. The principal components of the average service station price per gallon of gasoline in 1920 and in July, 1949, were:

	1920	July 1949
Wholesale Tank Car Price (Oklahoma)	$.216	$.100
Transportation, Selling Expense, Etc.	.064	.052
Dealer's Gross Margin	.017	.052
Service Station Price, Ex. Tax	$.297	$.204
Direct Taxes	.001	.066
Service Station Price, Inc. Tax	$.298	$.270

Prices of gasoline are determined by the same interplay of economic forces that determine the price of any commodity left to find its price level in a free and unregulated market. The changes that occur prove the absence of domination, and the small average percentage of return on the amounts invested in the industry over a period of many years thoroughly dispels any indication of monopoly.

The oil industry itself has made great contributions in improving the standard of living in this country. It has served the American public's constantly growing demand for petroleum products at prices that are as low or lower, relatively, than those for any other major commodity in general use. Its distribution service is unequalled by any other industry (to find, in this country, any hamlet so small or so remote as to be without a gasoline pump would be difficult). Its contributions to foreign trade and to the rapid development of this country can hardly be overrated. Its war record was tops. Its wage rates are among the highest of any industry. It has probably better conditions of employment and employe benefit plans than any other industry, and it was a pioneer in the shorter working week.

The expression adopted by the American Petroleum Industries Committee, "Gasoline is cheap; only the tax is high," is not only a slogan—it is also a fact.

Petroleum Promotes Progress

Oil Progress Week Observed by Industry

COMMENCING October 16 and continuing through the 22nd of the month, thousands of oil men and oil companies will observe Oil Progress Week.

Through the media of coöperative projects and individual company programs, they will report to their communities on the progress their industry has made in the 90 years since the drilling of Drake's well.

They will seek to increase public confidence in the oil industry by developing a broader base of public knowledge of the industry's progress and good citizenship. By symbolizing the interrelationship of the industry and the people which it serves, they will try to strengthen the friendship between the oil industry and the people of America's communities.

In every way possible, Texaco is coöperating in this effort to create for the industry a friendlier atmosphere in which to operate and do business.

Texaco Texamatic Fluid Now Available

A NEW product of Texaco's research and refining skill is on the market—Texaco Texamatic Fluid for automatic transmissions. Texamatic is a lubricant, power and heat transfer medium, and hydraulic control fluid. It will be sold and installed by Texaco dealers.

Let your Texaco dealer check your automatic transmission fluid and bring it up to proper level, or replace old fluid with Texaco Texamatic, which is fully approved by all manufacturers of all automatic transmissions and used for factory fill by most. Ask your Texaco dealer for this service when you drive in for stem-to-stern Winter-proofing during the present Fall change-over period.

New Films Produced by Texaco and O.I.I.C.

THE story of Texaco research, and a dramatic itemization of petroleum's contributions to progress were recently filmed and are available for showing to social and business organizations.

The Texaco film, *Research—Pattern for Progress*, is a comprehensive portrayal of research activities in The Texas Company. Covering the fields of oil exploration, production, and refining, it emphasizes for non-technical audiences the importance of research to the industry.

The second new production is an Oil Industry Information Committee film called *The Last Ten Feet*. The picture takes its title from the last 10 feet of hose through which gasoline travels from a service station pump to the tanks of waiting automobiles. It tells how abundant supplies of gasoline reach the nation's 250,000 service stations, and how petroleum products generally have improved America's standard of living since Drake's discovery in 1859.

Other Texaco films currently available for exhibition are: *Deep Horizons*, *Tanker*, *Masters of Molecules*, and *Desert Venture*. Free bookings of any of these films may be arranged through Sales Department Division Offices of The Texas Company at New York, Boston, Buffalo, Norfolk, Chicago, Denver, Indianapolis, Minneapolis, Houston, Dallas, Atlanta, New Orleans, Los Angeles, Butte, and Seattle.

Texaco to Sponsor Opera Broadcasts

BEGINNING November 26, The Texas Company enters its 10th consecutive season as the sponsor of Saturday afternoon broadcasts from New York City's Metropolitan Opera House.

The matinée programs, which have received world-wide acclaim from opera lovers, will be aired over the American Broadcasting Company network. Between-the-acts features will again include the "Opera Quiz" and "Opera News on the Air."

On Tuesday nights at 8:00 p.m., E.S.T., the Company also offers the Texaco Star Theater on television in a variety-type show which occupies a 60-minute spot on NBC's TV network.

With Milton Berle in his second season as master of ceremonies, the Texaco television show opened September 20.

Southwestern Oil Subject of New Book

OIL! TITAN OF THE SOUTHWEST, by Carl Coke Rister (University of Oklahoma Press, Norman—$5).

THERE's a quality of fanfare about the title of Carl Rister's new book that prepares the reader for the disclosure of spectacular events. And it's a story crowded with spectacular events that Dr. Rister tells in his valuable history of southwestern oil development.

Spanish sailors wrote the first accounts of petroleum's use in North America. Sheltering on the Gulf coast of Texas near Sabine Pass, they observed oil on the water, and used it to calk their ships—in 1543. Before that, southwestern Indians had used oil where they found it, taking therapeutic baths in petroleum springs.

But it was drilling that tapped the oil riches of the great Mid-Continent and Gulf producing areas in the late Nineteenth and early Twentieth Centuries.

Dr. Rister tells of those years when oil was a fever in the blood and excitement reached gold rush pitch as the wells came in at Corsicana, Spindle Top, Ranger, Burkburnett, and other wealth-drenched fields.

In Texas, Oklahoma, and New Mexico; in Louisiana, Arkansas, and Kansas, men cried "Oil!" and towns sprang up around their rigs. America was moving into an age of oil through a blustery era of wildcatting, boom towns, and bonanzas.

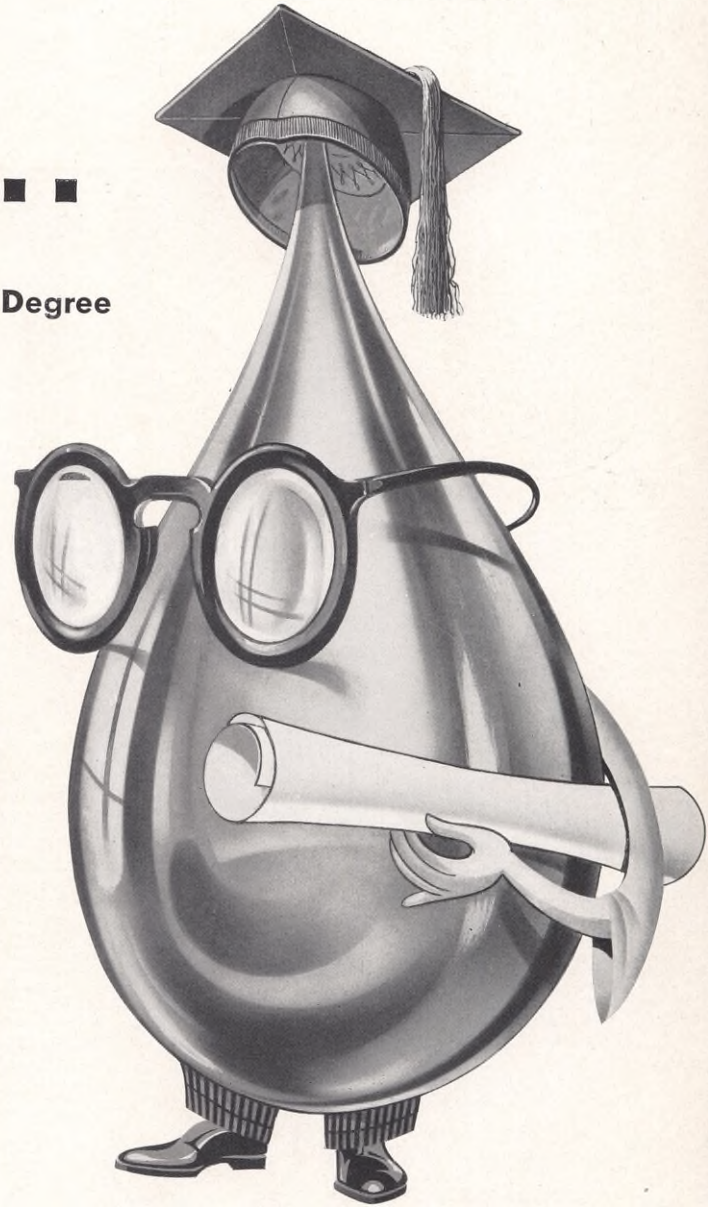
Titan takes the story past those frenzied days to the more orderly, but still dramatic, period of modern scientific exploration and development. It recounts the growth of petroleum companies in the Southwest, and tells of J. S. Cullinan, T. J. Donoghue, and James S. Hogg and their part in the foundation of The Texas Company.

With 467 pages of text and numerous illustrations, Dr. Rister's book is an exciting chronicle of the Southwest's contribution to American progress. It is an authoritative reminder that "oil, and southwestern oil for the most part, has become industrial America's lifeblood."

PRINTED BY THE CONDÉ NAST PRESS, GREENWICH, CONN., U. S. A.

OIL...

With an Engineering Degree



It takes many skills to release the benefits for mankind that are stored in the hydrocarbon molecules of crude oil. Each of the more than 700 petroleum products Texaco makes is an example of "oil with an engineering degree." The many hundreds of Texaco scientists hold degrees from Bachelor to Doctor in all branches of learning. Trained men are key men in every phase of Texaco's operations as an integrated oil company. In marketing Texaco industrial lubricants, for instance, "oil with an engineering degree" is specified by experienced Texaco Lubrication Engineers to meet the exact needs of consumers

Summer's gone —

time to

Change

Take your car to your Texaco Dealer NOW!

He'll winter-proof your car from stem to stern . . . check battery, spark plugs, tires and under-surfaces. He'll put in Texaco PT ANTI-FREEZE — one filling gives you sure protection all winter long. He'll fill your crank case with HAVOLINE to give you full *power* from your engine.

He'll "cushion" your car with MARFAK — the friction-fighting chassis lubricant that lasts 1000 miles and more! And he'll fill your tank with Texaco SKY CHIEF, the pace-setting, luxury gasoline . . . or Texaco FIRE-CHIEF, the emergency-power fuel that's *regular priced!*

Drive in, today, at your Texaco Dealer's . . . *the best friend your car ever had!*

TEXACO

REG. T.M.

New! **TEXACO TEXAMATIC FLUID FOR AUTOMATIC TRANSMISSIONS**

Your Texaco Dealer will check your automatic transmission fluid and bring it up to proper level, or replace old fluid with Texaco Texamatic in accordance with your car manufacturer's recommendations.

THE TEXAS COMPANY

TEXACO DEALERS IN ALL 48 STATES

Texaco Products are also distributed in Canada and in Latin America