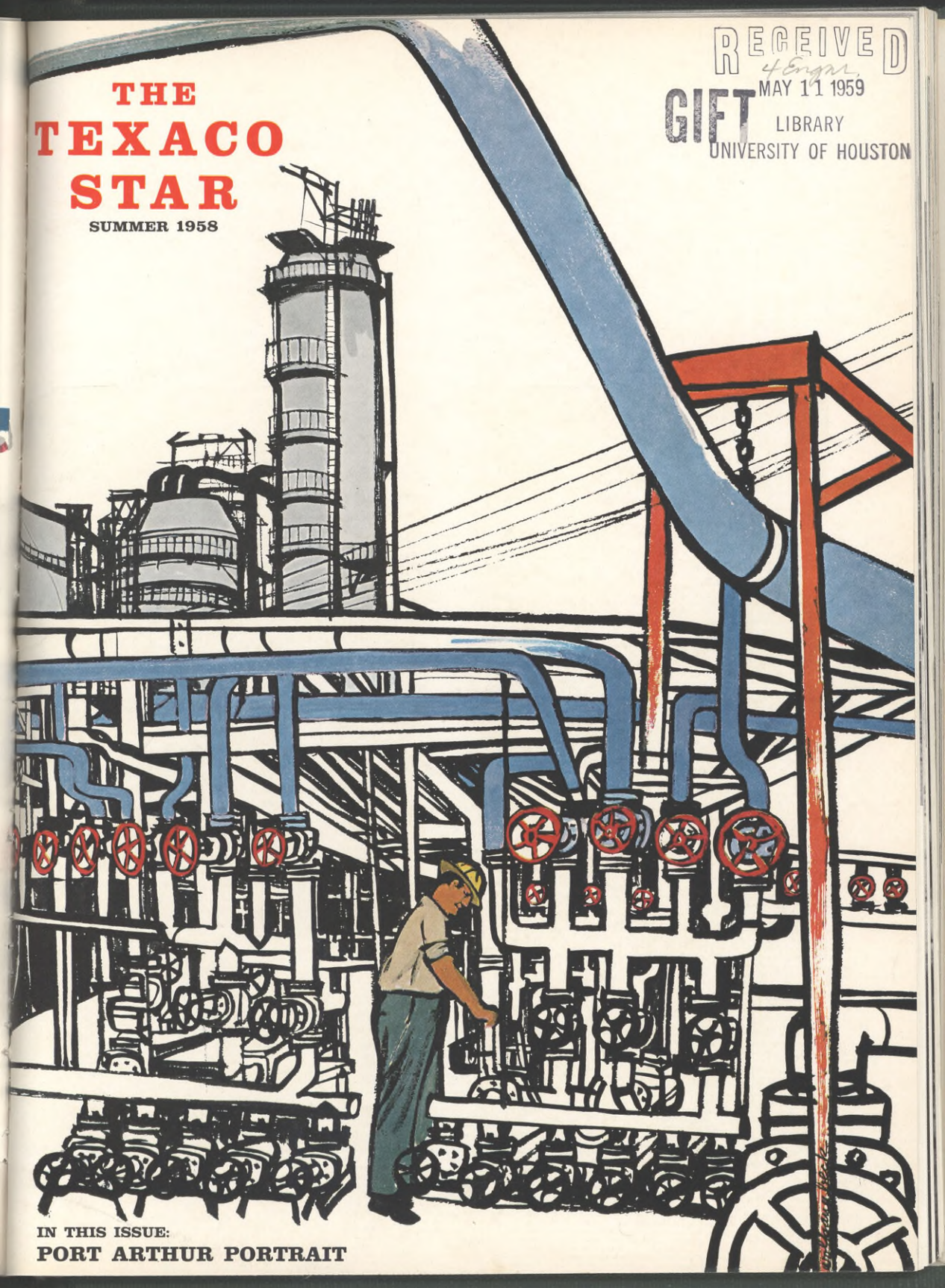
THE TEXACO STAR

SUMMER 1958



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A HAPPY

THE TEXACO STAR

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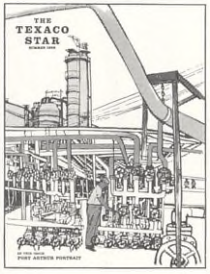

THE TEXACO STAR
A publication of
THE TEXAS COMPANY
135 East 42nd Street, New York 17, N. Y.

THE COVER: Artist Jack Wolfgang Beck has resolved the problem of depicting the size and scope of Port Arthur Works by condensing and rearranging some of those elements of the immense refinery he found most intriguing into a bold and not at all literal composition. For a photographic treatment of the subject, see **Port Arthur Portrait**—which begins on Page 10.

THE STAR is published by the Industrial and Public Relations Department for Stockholders and Employes: **Thomas D. Durrance,** Director of Public Relations • **Ellis Prudden,** Supervisor, Publications Division; **Gordon Bowman,** Editor; **R. R. Fuller,** Staff Writer; Irwin Glusker and Dick Hendler, Co-designers.

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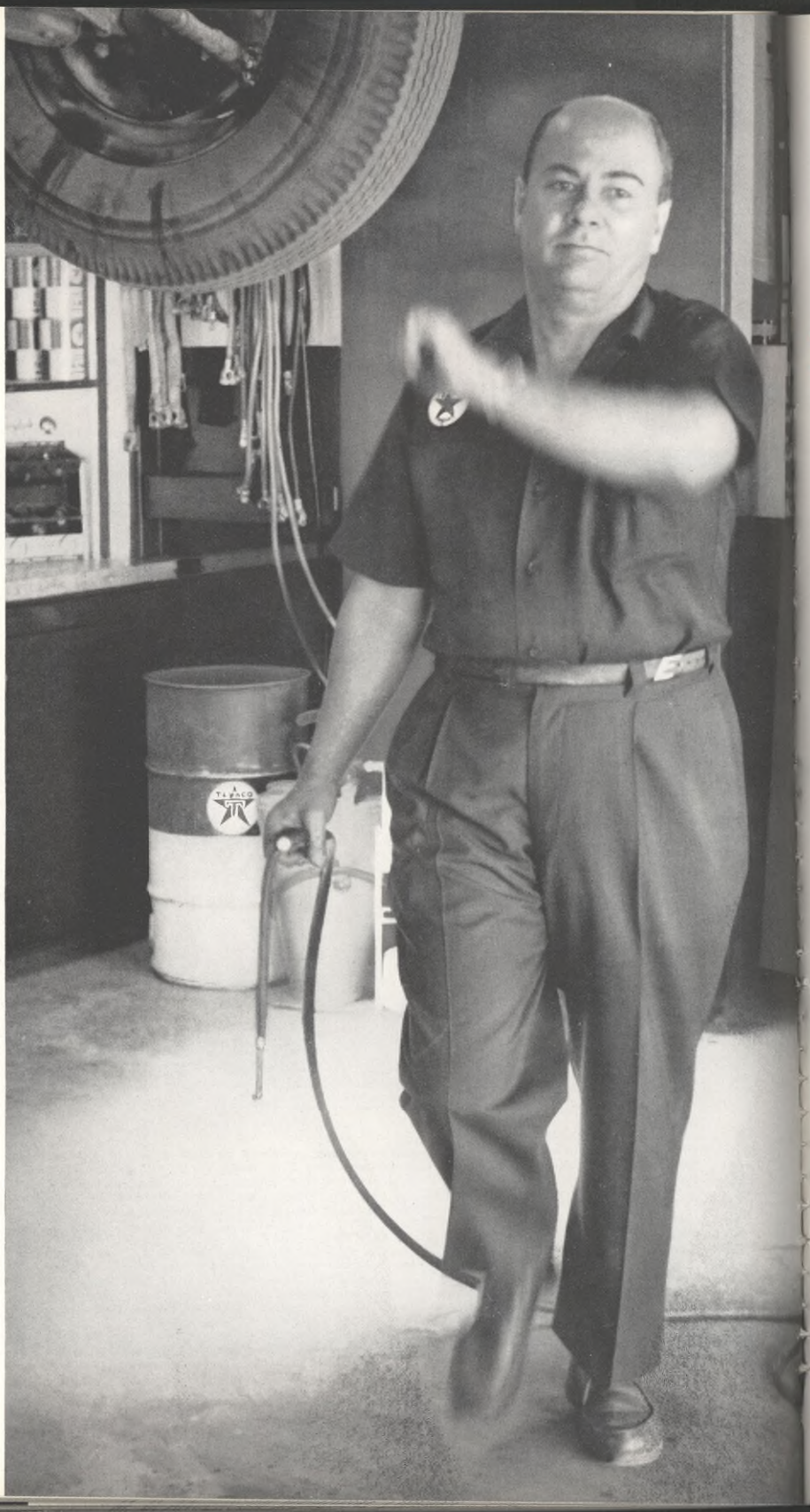
PYIND OF MUSIC

Jazz is an original American article that has become one of this country's most successful exports. From Stockholm to Santiago, this happy music has made friends and collected fans in a way diplomats' speeches never have been able to. Right from its riverboat days, jazz has been bought enthusiastically here, too; and it reached a peak of popularity in the 1930's, when a studious young man with an amazingly nimble clarinet introduced a new jazz form called "swing."

Benny Goodman's brand of swing, he proved on Texaco's April 9th *Swing into Spring* TV show, can still bring the house down. The hour-long Goodman show, whose theme tied in with the Company's national Springtime advertising, was applauded roundly by critics and the public alike. One New York columnist reported next morning: "Only thing that disturbs me about last night's *Swing into Spring* is that I forgot to turn on the tape recorder to preserve this priceless hour for my private archives."

The reviews were raves around the country. And 800-odd letters which piled in from viewers glowed with comments like this one, from Alpena, Michigan: "Many thanks to . . . Texaco for the most enjoyable hour I've ever spent with television." And this, from Cullawhee, North Carolina: "Texaco knows good music as well as oil products . . . they bring the best." By all odds, the *Swing into Spring* show had provided just the right music for the motoring public's ears.

In a swinging mood, show's exuberant dancers rehearse production number.



In the lube bay of his Tucson service station, hustling Elmer Chumbley, a Texaco dealer, puts careful finishing touches on another service job.

MAN ON THE MOVE

Throughout the petroleum industry, competition is keen—and the service station is no exception

There's no urgent reason, as you drive along Craycroft Road outside Tucson, to stop at Elmer Chumbley's service station—if gasoline is all you want, and you are not too particular about the brand. Within a mile radius of Chumbley's place you can take your pick from 13 other stations. Up the road about a quarter of a mile, you can even buy something called "Outer Space" gasoline.

If you are like most drivers, though, just any gasoline is *not* all you want. You look for gasoline you can be sure of, for one thing; and you appreciate service that goes beyond a swipe at the windshield. Elmer Chumbley will see that you and your car are well taken care of. Those 13 other stations in the area represent one good reason: competition as tough as you are likely to find in any business.

Most of Chumbley's competitors are not off-brand, "Outer Space" operations. Most of them are selling leading brands of fuel and lubricants.

Chumbley is convinced the Texaco products he sells are the best on the market; but he realizes it takes some hustling to get a driver close enough to the pump to make a sale, and that the surest way to keep that motorist coming back is by offering friendly, competent, genuine service.

"This isn't just a gas station. My business is a service business: I have to give the customer everything he needs to keep his car running the way it should," he says. Watch him at work on a typical day and you will find he means what he says.

Chumbley will do almost anything short of drying dishes to gain a customer or keep one. Whatever he does, he does fast. "Chum" is a man on the move, and he moves in high gear. He has to, to keep up with his competition. He's on the go at his station seven days a week, 12 to 14 hours a day, except on Sundays—when he usually allows himself the luxury of a half-day at home. Several nights a week he stops by the station to see how his night shift is doing.

During the day, when he is not busy taking care of customers, Chumbley goes to surprising lengths to build his customer list. Four miles from his place, for instance, a huge new housing development is being completed. Chumbley visits the development owners once or twice a week, gets the names of people who have just bought homes in the project—then calls on the new neighbors to let them know Chumbley's Super Texaco Service Station is just down the highway and they won't find better service anywhere. His favorite sales clincher: if you order a lube job, and find one single lubrication point on your car that has been missed, he will pay you $25 (and, of course, take care of the overlooked lube point).

Chumbley's station is hard by a large shopping center, and in the year and a half he has been at this location he has managed to corral and hold most of the center's store owners as customers. You see why as you watch him roam through the center, going from store to store reminding his clients they are about due for an oil change or a new set of tires or a wheel alignment. He *knows* they are: he's gone through the parking lot checking the small doorjamb stickers in their cars that are used to record service work.

Like most service station operators in the Tucson area, Chumbley offers trading stamps as a lure. The trading stamp is an "extra" which has become fairly common in gasoline retailing; Chumbley feels it takes stamps and more to build his business. Friendly gestures, for instance, like calling a nearby doctor to make an immediate appointment for a customer complaining of an aching back (he did this recently,

At a luncheon meeting of the local Optimists Club, Elmer Chumbley listens with other Tucson businessmen to talk by Air Force officer from nearby airbase.

MAN ON THE MOVE

Along with a 12 or 14 hour day

and the customer came back later in the day with his ache gone and his gratitude boundless). Or driving with an Air Force officer to a neighboring drugstore to get the officer some lighter fluid, one petroleum product he does not handle (the flier was in his flying coveralls, and regulations did not allow him to leave his car). Or picking up the tab for refreshments at a bowling alley in the neighborhood, when a group of blind children meets there to bowl.

Roughly a mile from Chumbley's place is a Strategic Air Command base, staffed by some 10,000 Air Force and civilian personnel. It sounds like a ready-made customer pool, until you hear the catch: a leading brand of gasoline is sold on the base at an average of four cents less per gallon than Tucson prices.

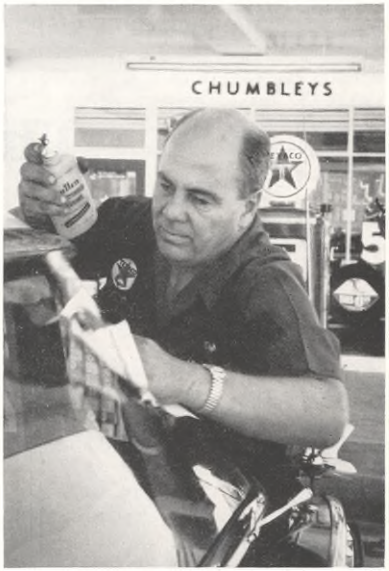
Chumbley has to scramble to attract the fliers' business, with that price disadvantage. He does, and he has managed to create about a quarter of his total sales out of the friends he has made among base personnel. Pay day at the airfield brings the birdmen flocking, to cash their checks and have their cars looked over.

Plainly, Elmer Chumbley is an enterprising man. So are his competitors. The "Outer Space" dealer attracts traffic with a midget who strolls around his driveway in a man-from-Mars outfit. The dealer across the road from Chumbley offers customers *double* trading stamps.

Other independent dealers post prices a few cents lower than the Tucson average—hoping to make up through volume sales what they lose on individual tankfuls. Tucson seldom sees a gasoline "price war"—but one occasionally occurs. Most dealers hate to see one start. Profit in a service station comes mainly from service work and accessory sales, and any shaving of gasoline prices bites into profit margins. If gasoline prices seem inordinately high in some areas, the cause is invariably high taxes.

Elmer Chumbley has a feel for system and method; and his year-and-a-half of college, majoring in accounting, gave him enough formal training to allow him to exercise an instinctive regard for order in his role of independent businessman (Chumbley set himself up in the service station business, is completely on his own in the administration of his business affairs). Before becoming a Texaco dealer, he was a regional sales manager for a leading tire manufacturer—and this executive experience, too, was helpful in developing a systematic approach to his manage-

Regular calls on merchants in adjoining shopping center, most of them steady customers, have proved a help in building his sales.



Chumbley's brand of service includes thorough windshield cleaning, other courtesies.

y in the station, a busy evening of work for the community has become his energetic routine

ment of an eminently successful service station.

His use of forms and records to help him keep track exactly of his expenses and profits would do any small business proud. He keeps weekly tabs on operating expenses; he can put his finger on weak sales spots any time by examining the itemized accounts he keeps of mechanical work, tire sales, gasoline and oil sales volumes. He also has a part-time accountant who prepares these records for his review, keeps customer follow-up files up to date, and sees that the business is being run in a professional way.

Although how he manages his station is up to him, Chumbley *does* receive help from Texaco in the form of suggested procedures and methods; and he is visited regularly by Texaco's Tucson merchandising salesman, who provides displays, shows him newly available direct mail and other promotional materials, and tries to be generally helpful. Chumbley appreciates this help, and makes use of just about every business form and promotional aid Texaco suggests.

"I'm in business to make a living sure," Elmer Chumbley says, "but my living isn't all business. I try to do some worthwhile things as a citizen, too, when I'm not chasing around the station."

The "worthwhile things" Chumbley refers to so casually would quickly disabuse the idea some people cling to that a typical service station owner could not possibly add much to his community's welfare.

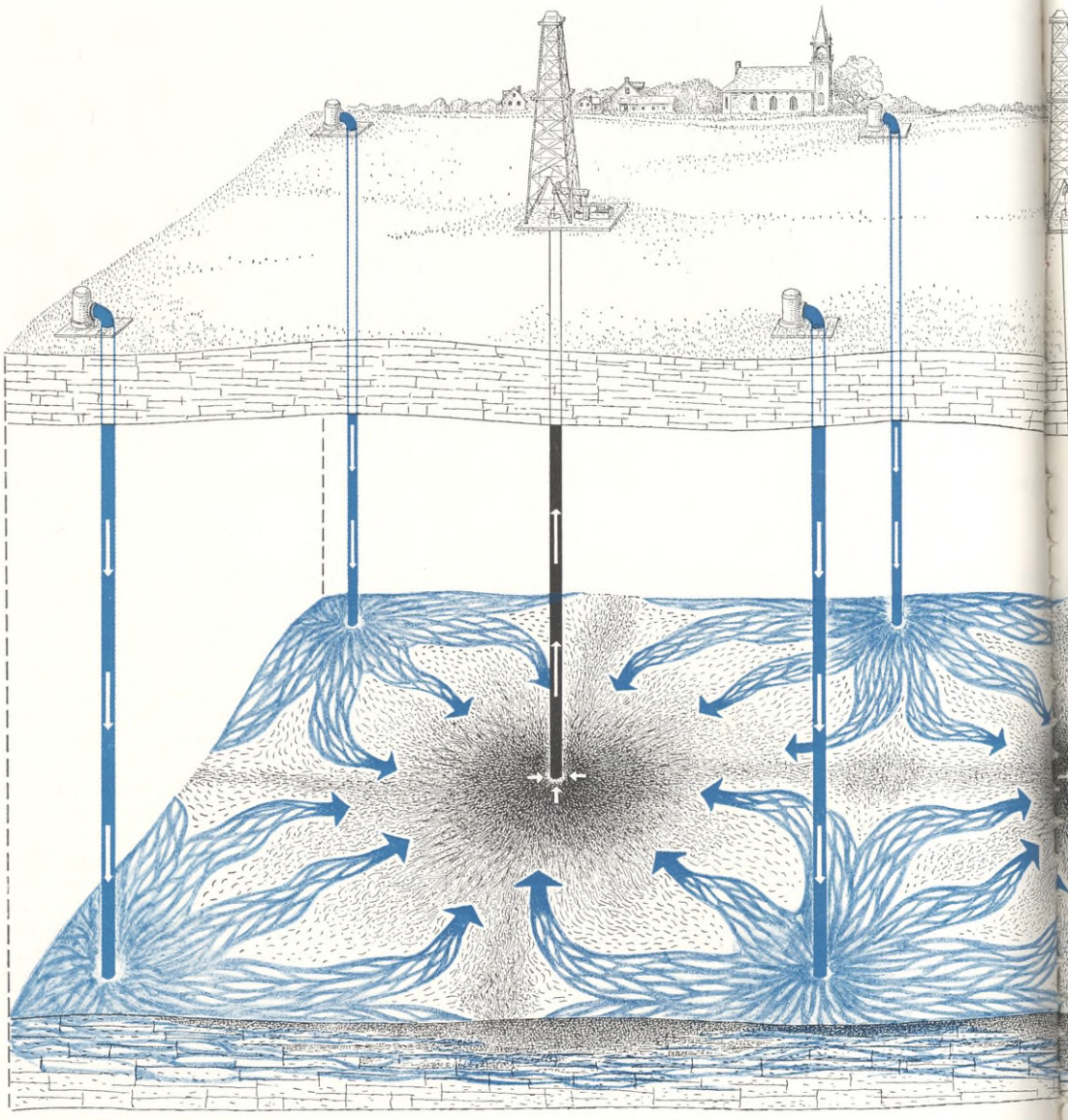
Along with his contribution to the blind children's bowling fun, Chumbley also sponsors a Little League baseball team. He buys the uniforms and equipment, and lends his top-sergeant's voice to the rooting.

As a member of the board of directors of Tucson's Optimists Club he spends a very considerable amount of his off-duty time working on plans for children's Christmas parties, outings, and other projects the group develops. With his wife, he is an active PTA member who does not hesitate to volunteer when the call goes out for help on school projects. He is a member of Tucson's Chamber of Commerce, too, and the Chamber knows it can count on him when it needs help with any of *its* projects.

Elmer Chumbley keeps moving in his station and in his community with an energy that probably would make him a successful businessman no matter what field he happened to choose. In the one he picked—one in which he earns a very comfortable living—fierce competition makes energy, resourcefulness, and a sincere sense of responsibility vital. •

Massive injections of water keep an oil field alive outside Salem, Illinois

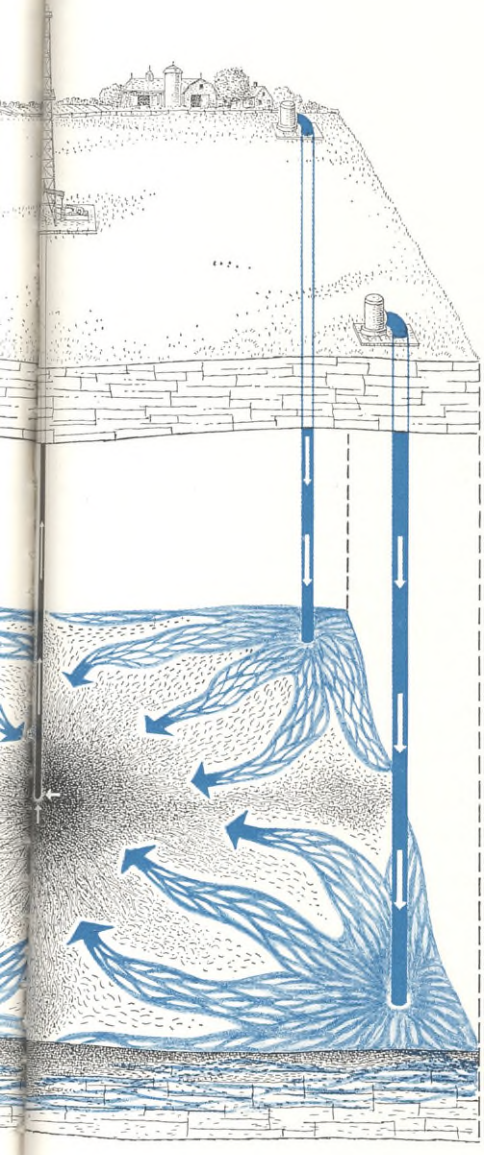
The town that welcome



Water (indicated in blue) acts as powerful pushing force which drives oil towards its only outlets—the wells.

ed flood

by Hillel Black



Under rolling farmland five miles outside Salem, Illinois, Texaco has deliberately created a flood. The farmers know about it, and they like the idea.

The Salem flood is one of the most ambitious efforts oilmen have ever made to prolong the productivity of an oil field. It is also one of the nicest things that ever happened to the people around Salem, because it means that the oil royalties and general economic brightening that came to Salem when the Salem Pool was discovered in 1938 will continue for many years to help the community's growth.

Without the man-made flood, the oil field at Salem probably would have been abandoned by now. By injecting massive doses of water into the underground formations to push oil into the wells, Texaco hopes to keep the Salem Pool productive for at least the next 20 years.

This is good news to the community because over the *past* two decades the production from the field has resulted in a number of important civic improvements.

The Salem Community High School, for instance, is a gleaming model of school design. Oil tax money was instrumental in its construction. Young's Chapel, a handsome Christian Church, was built with oil royalties from Texaco wells.

Oil from the Salem Pool has meant more money for farmers and other local people with royalty interests in the field's leases. At the same time, Salem merchants have seen their businesses grow, nourished by money put into local circulation with oil royalty checks.

To understand why Texaco started the Salem flood, one must understand the industry's concern for conservation—the problem of how to get the maximum recovery of petroleum with a minimum of waste.

Conservation practices employed by oilmen differ significantly from the methods used by farmers, lumbermen, and ranchers. Farmers grow new crops, lumbermen plant new trees, and ranchers reproduce new herds; but oilmen have only one crop. Once oil is withdrawn from the earth it cannot be replaced.

Last year the petroleum industry spent nearly $4.5 billion in its search for liquid hydrocarbons and its development of existing oil fields in the United States. That figure, interestingly, was about triple the Federal Government budget during last year for the development and conservation of all the nation's natural resources (including water and power, forestry, fish and wild life, and petroleum).

Besides seeking new oil fields, oilmen also are concentrating their own resources in developing new techniques to coax as much oil out of the ground as possible. The results are dramatic. Just a few decades ago only 20 per cent of the oil in any reservoir could be recovered. Today that figure has leaped to as high as 80 per cent, and some oilmen are expecting near total recovery.

To put it another way, this country's proved crude reserves (oil found but not yet drawn from the earth)

Converting an oil well to a water injection well is a basic step in the flooding process.

total 30 billion barrels. Formerly about one-third or 11 billion barrels of those reserves would have been considered beyond recovery. But now the oil industry expects to capture those 11 billion barrels through today's recovery methods. This is equivalent to more than four times the amount of oil produced in the United States in 1957.

The special techniques for bringing up all this additional oil come under the heading of "secondary recovery" as differentiated from "primary recovery." Under primary recovery the oil flows to, up, and out of the wells as the result of natural pressures in the oil field or through mechanical pumping. In secondary recovery man steps in and forces the oil out of the well by artificially building up the pressures in the reservoir. So far, water has been the best rejuvenator.

Secondary recovery first came into fairly widespread use in the 1930's. But its methods were applied only after a field's natural flow had stopped or it had failed to respond to pumping. Now oilmen use the techniques of secondary recovery as soon as possible after a new field is first tapped. As a result they are able to conserve and maintain the natural pressures in the reservoir from the start.

Putting these techniques into practice is a complex affair that calls for highly trained petroleum engineers and other experts.

Oil is trapped in porous rock many thousands of feet under the ground. The tiny spaces in the formation are interconnected so that it is possible to drain the oil from the pool or reservoir.

Usually, when a well is brought in, nature supplies the force to make the oil flow. This push-force consists of gas or water or both. The gas is either dissolved in the oil or lies on top of it like a cap. Water, on the other hand, either flanks the oil reservoir or lies beneath it. With the gas or water pressing against the oil, the oil is under tremendous pressure to flow and naturally seeks an outlet. Such an outlet is provided by the well drilled into the reservoir. When this happens, the gas or water then pushes the oil into and up through the well.

Eventually, the natural pressure provided by the gas and oil begins to peter out. At that point or sooner the modern producer calls on his specialists to determine the shape and size of the reservoir and whether it is responsive to gas or water pressure or both. Conditions in an oil field can vary to the point where they are entirely different in separate parts of the same field. Engineers are able to analyze the characteristics of the field by studying core samples of the oil-bearing formations, simulating reservoir conditions with laboratory apparatus, and by other scientific procedures.

Once the nature of the field has been determined, the producer decides which method he'll use to increase pressure in the reservoir.

One possibility is called "dissolved gas drive." In this technique gas is infused into the oil reservoir itself. This process is similar to dissolving carbon-dioxide in water to make soda water. Like the bubbles in carbonated water, the gas expands and pushes the oil to the well. Dissolved gas drive is considered least efficient, resulting in about 30 per cent recovery.

Another artificial means of creating pressure is called "gas cap drive." Again the oilman injects gas back into the field. But in this case the gas settles on top of the oil reservoir like a lid, creating a heavy down pressure. This forces the oil to the surface through the well tubing. Gas cap drives are relatively efficient, providing up to 50 or 60 per cent recovery.

The most effective technique in general use is known as "water drive." Water is injected into the reservoirs of water which surround or lie under the oil. A flood or water drive pushes the oil so that it is forced to flow to its only outlet, the well. This method has resulted in as much as 80 per cent recovery.

The oil industry is now testing even more dramatic recovery techniques. In one process called "thermal recovery," the oil at the bottom of the reservoir is ignited. The heat of combustion warms the remaining oil, thinning it and making it flow more readily. At the same time the generated heat creates the pressure necessary to force the remaining oil to the well. Another method acts like a dry cleaning process. In this case gas which works like a solvent is injected into the formation. It then slides the petroleum hydrocarbons out of the interstices, or pores, of the rock. This technique boosts recovery 60 to 80 per cent and some oilmen think it can approach 90 per cent.

But conservation does not stop at the oil field. The battle against waste continues wherever oil is stored, transported, or processed. For example, specially designed storage tanks, whose roofs seem to heave and sigh, help prevent evaporation. "Floating" roofs actually rise as the petroleum expands due to increases in outside temperatures. When the mercury drops and the hydrocarbon molecules contract, taking up less space, the roof of the storage tank sinks. Thus, less room is left for hydrocarbon-laden vapors

to form. Both the rising and falling of the roof keeps evaporation at a minimum.

Texaco—a pioneer in conservation—today is operating over 100 active secondary and pressure maintenance projects in various parts of the country.

The magnitude of the Salem operation, thought to be the largest water drive recovery project anywhere, can be seen in the plan to inject 1.68 billion barrels of water over a 20-year period. As the result of this vast water flooding project, ultimate recovery is expected to total 70 per cent. This is 30 per cent more than could have been realized without flooding.

The Salem Pool, a major oil reserve, was discovered by Texaco in 1938. In the succeeding years a total of about 2,400 wells were drilled in an oil-rich area of 6.5 by 2.5 miles.

By 1948, though, Texaco realized that the point of ultimate recovery through primary methods would soon be reached. If something wasn't done, millions of barrels of oil would be permanently lost. This oil could be saved, it was determined, by flooding.

But before the project could get under way, several staggering problems had to be overcome. The first was unitization of the field. In order to flood the field effectively, it was necessary to turn it into one single development or unit, for water flooding knows no man-made land boundaries or interests.

The initial attempt to unitize the field began in 1948. The Texas Company spearheaded the drive. To put unitization into effect some 2,000 royalty accounts in 44 states and seven foreign countries had to be contacted. By 1950 the field had been 90 per cent unitized. Today over 99 per cent of all owners in the field are in the "Texas Salem Unit," which covers about 14 square miles.

In the meantime, Texaco engineers were working out the solutions to a massive series of physical problems. First they had to devise a water supply system which could ultimately provide 185,000 barrels of fresh water a day. The source for this enormous volume of water was found in the gravel bed beneath the Kaskaskia River, 17 miles away. Some three miles in width, this gravel terrace carries five to seven times the volume which flows in the river itself.

In order to collect the water a concrete tube 13 feet in diameter was sunk 68 feet into the Kaskaskia's gravel bed. An additional 40 feet extends above the water in order to place the pumping installations atop the collecting tube above the river's flood stages.

Pipe lines carry the water to the field where it is purified and prepared for use at a treating-injection plant, believed to be the largest in the world. Treating the river water makes it compatible with the water which surrounds the underground oil reservoirs, thus reducing corrosion and clogging.

Besides treating the fresh water from the river bed, the plant also treats additional thousands of barrels of water brought up along with the oil from the reservoirs. The two kinds of water are then combined and injected into the flooded areas. Currently 200,000 barrels of water are being pumped into the producing formations through 411 injection wells each day.

Most oil fields are made up of several oil reservoirs. In the Salem Unit there are five, all varied in shape and size and each at a different level. Engineers had to work out a way of simultaneously flooding five separate oil-producing formations.

It was decided to employ the two water drive methods now in general use. The one doing the major work at Salem is called peripheral flooding. In this case, water flooding is started along the perimeter of the field. The water acts like an enormous broom, sweeping from one side or one end of the field towards the opposite border. As it moves, the water pressures the oil ahead of it into and up the wells.

Texaco engineers also are employing another water drive technique called pattern type or "five spot." Imagine you have a piece of graph paper on which you have designed several rows of squares by drawing little black circles for the squares' corners. Make believe each of these circles is an oil well. Now in the center of the squares place red circles, one for each square. The red circles represent water injection wells. In actual use, such a series of small water drives rejuvenates the surrounding producing wells.

Full-scale flood operations began at Salem in 1953, and a measurable production increase was noted the following year. Oil production since then has been boosted to 16 barrels a day per well, from the '53 average yield of 4.5 barrels, and by the time peak recovery is reached in 1963 each well will be producing an average of 30 or 40 barrels daily.

The Salem project will cost an estimated $60 or $70 million and last about 20 years. The first five years were devoted to developing the field for flooding. During the next 12 years, the Salem Unit will undergo a steady rate of water injection. And the last three years will be devoted to salvage, in which the last recoverable deposits of oil will be extracted.

The great Salem flood, only one of more than 100 Texaco conservation projects, is but a part of the petroleum industry's ever widening efforts to stretch to the last drop this nation's oil resources. It is one flood the people of Salem welcome. •

Hillel Black *is a free-lance writer who has written numerous science and feature articles for leading newspapers, press associations, and national magazines. His science articles have ranged in subject from petroleum to the Salk polio vaccine.*

Port Arthur Works is on a 5,000-acre site. In foreground are two catalytic reformers. Below, day shift employes leave plant.

Constant change and improvement make the picture of Tex

PORT ARTHUR PORTRAIT

of Texaco's largest refinery one that reflects the Company's over-all striving for progress

Port Arthur, Texas, was chosen as the site for Texaco's first refinery—a cluster of storage tanks and a couple of coking stills—because of its nearness to the fabulous Spindletop field, and because products from the refinery could be shipped by water from this Gulf of Mexico port to prospective customers up the Mississippi, along the Atlantic seaboard, and even to European ports of call.

These early advantages have grown in importance as the Southwest has expanded in industry and population, and as vast new resources of crude oil have been discovered throughout much of Texas and in nearby Southwestern states.

Texaco's first crude oil came from Spindletop, and even today a few barrels are produced on the Company's Silver Dime fee there, and are processed at the refinery. Sour Lake field, 30 miles northwest of Port Arthur, is another historic link with the Company's earliest history. It was the dramatic discovery by Texaco at Sour Lake early in 1903 which revived the Company's prospects after salt water invaded Spindletop. Fifty-five years later, the refinery gets about 500 barrels of oil daily from Sour Lake, but the crude from both Spindletop and Sour Lake is less than a drop in the barrel of the total amount processed.

Instead of being the terminal of a single crude pipe line running from Sour Lake and Spindletop, as in 1903, Port Arthur Works today is the hub of a net-

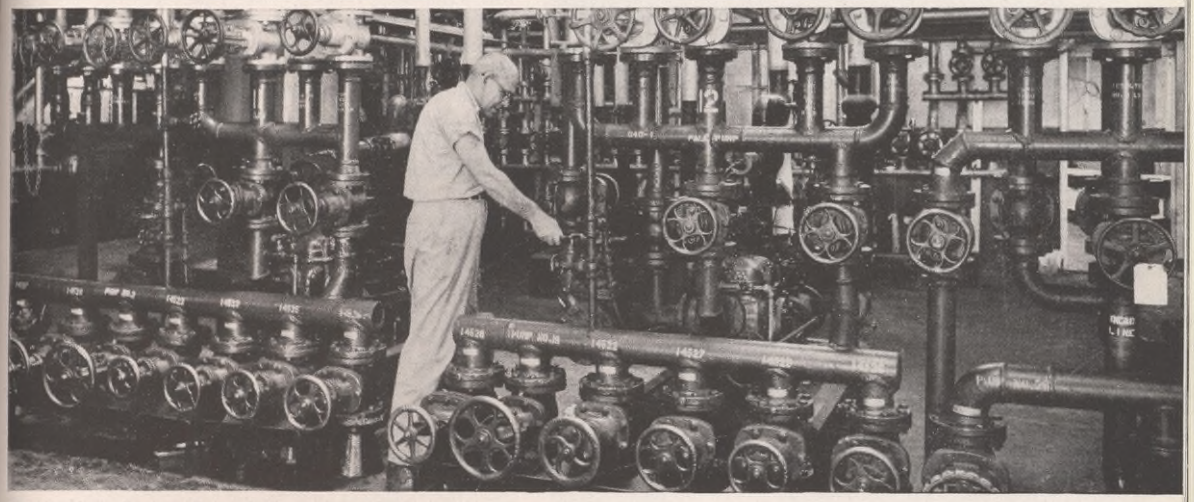
TEXT CONTINUED ON PAGE 14

Automatic controls on the refining units increase operating efficiency, cut costs, and assure uniform high quality.

Texaco makes most of its own containers. Paint on pails is dried by infrared heat.

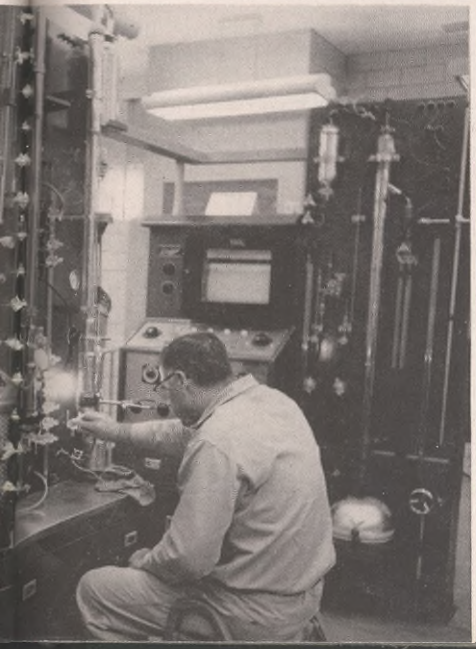
PORT ARTHUR PORTRAIT

Key to the composition: modern equipment, skilled workers



Lubricating oils flow through blending pipes, final step in producing nearly 400 different grades at the Works.

Some 4,000 analytical and quality control tests of products at various stages of manufacture are made daily to see that they meet specifications.



Many skills help keep refinery operating at peak efficiency. Machinist, above, works in completely equipped shop.

PORT ARTHUR PORTRAIT

More than 250,000 barrels of crude oil flow daily into the huge Wor

An employe on night shift places process samples in box, from which they will be picked up for laboratory testing.

CONTINUED FROM PAGE 11

work of crude pipe lines extending into many Texas fields, into Louisiana, and even as far away as the Four Corners (where Arizona, Colorado, New Mexico, and Utah meet). Through these pipe lines, 250,000 barrels of oil flow daily to the refinery.

Some 7,000 Texaco people are engaged in manufacturing operations in the Port Arthur area. The Works has become almost a city within a city. It has its own power plants, water works, fire department, assembly rooms, cafeterias, and its own medical facilities.

Despite the intricacy of its operations, the men and women who work here are as familiar with their jobs as a dirt farmer is with plowing, because the Works really consists of numerous "communities" of employes, with each job dovetailing into place.

The amounts of power, heat, and water required to operate the refinery are staggering. Twelve million gallons of fresh water are used daily. Enough electricity is generated in the Works' power plants to meet the domestic requirements of a city of well over half a million people. Some 26 tons of steam are produced every minute.

Port Arthur Works' rated daily capacity reached 250,000 barrels earlier this year with the completion of a new crude distillation unit with a capacity of 80,000 barrels. The net addition, however, was 20,000, since equipment having a capacity of 60,000 barrels was withdrawn from service. This replacement of the old by new and more efficient equipment is an example of the constant improvements which are made at Port Arthur Works and other Texaco refineries to improve products and keep abreast of competing companies.

Other installations completed earlier this year at Port Arthur Works include a fluid catalytic cracking unit having a capacity of 60,000 barrels daily, and an addition to the No. 3 alkylation unit. Scheduled for completion in 1959 are a 20,000-barrel catalytic reforming unit, and a 28,000-barrel Udex unit.

The first basic step in refining is distillation, the principle of which is familiar to anyone who has ever boiled water and seen the steam condense. The furnace in which the crude oil is heated may be as large as your house. Pipes filled with oil run along the walls and ceilings. The vapors given off—corresponding to the steam from the kettle—condense in separate processing facilities.

Gasoline is the first product to vaporize, followed by kerosine, diesel fuel oil, gas oil, raw lubricating oil, and other "cuts" from the barrel. These products must be further refined before they meet Texaco's quality standards and are ready for market. Fluid catalytic cracking, catalytic reforming, and alkylation, for example, are processes for upgrading the fuels obtained from distillation.

Port Arthur Works is not just another huge refinery turning out fuels. It includes one of the largest lubricating oil manufacturing plants in the country and the largest grease-making plant in the world. It includes a plant for making additives for lubricating oils, and another plant for the manufacture of Petrox, Texaco's exclusive all-petroleum additive used in Sky Chief Su-preme Gasoline. It includes product control laboratories in which 4,000 samples are tested daily.

The Works includes Texaco Island, site of the shipping terminal, and of a metal container manufacturing plant. The docks at Texaco Island can accommodate nine ocean-going tankers at one time. In a typical month nearly 100 ships and barges are loaded with Texaco products for both foreign and domestic markets. Shipments of products are also made through product pipe lines, and miles of box cars and tank cars. Port Arthur Works is tied directly into two product pipe line systems. One carries products to Houston, Hearne, Waco, Fort Worth, Dallas, Austin, and San Antonio, and the other to Lake Charles and Baton Rouge, where a connection is made with a system which runs from Louisiana to North Carolina.

Works as far away as Utah

Texaco's metal container manufacturing plant on the Island turns out some 130,000,000 containers a year, ranging in size from three-ounce cans to five-gallon pails and drums. Even this large number does not meet entirely the requirements, and other containers are purchased from outside manufacturers. Over 300,000 containers are filled daily with Texaco products. A single machine can fill as many as 600 quart cans per minute.

Fifteen miles eastward of Port Arthur is Port Neches Works, a separate plant, to be sure, but an integral part of Port Arthur's operations. Port Neches probably manufacturers more asphalt than any other refinery in the world.

Here Texaco processes 40,000 barrels of crude oil a day. After the asphalt is removed, the straight-run distillates are moved by pipe line to Port Arthur for further refining.

The Port Arthur complex utilizes in some way every bit of crude oil it receives. It manufactures motor fuels, aviation gasolines, jet fuels, motor oils, kerosine, furnace and diesel oils, nearly 400 grades of lubricating oils, over 100 grades of greases. It manufactures petroleum jelly, paraffin wax, solvents, naphtha, and raw materials for the petrochemical industry.

Some of the gases which were once only by-products of refining are now the raw stocks for a number of petrochemical products, and Port Arthur Works supplies such gases to plants at Port Neches, in which the Company has an important stake in the growing petrochemical industry. Texaco has an indirect 25 per cent interest in Neches Butane Products Company; a 50 per cent interest in Texas-U.S. Chemical Company; a 50 per cent interest in Jefferson Chemical Company.

Port Arthur is in the midst of one of the fastest growing industrial areas in the Southwest and yet it has retained many of the characteristics of a bayou town. As Texaco and other manufacturers there have expanded their operations, the city has attracted many new residents from the Louisiana coastal area, from East Texas, and elsewhere. Most of them take to it as the ducks take to the rice fields which dot the lowlands. Newcomers soon find themselves at home at the Works and at Port Arthur.

Port Arthur Works is not completed; they say a refinery is never completed. Not a year has gone by since the first stills began operating in 1903 without some improvement or expansion in the plant, nor is one likely to. Port Arthur is a constantly changing portrait in progress. •

About 100 tankers and barges a month are loaded for domestic and foreign markets.

TIME FOR TAX REFORMS

Respect for the importance to enterprise of a favora

EDITOR'S NOTE:

The past few months have seen intense debate in the Congress on the urgent need to reform Federal income taxes. A recent newsletter published by The First National City Bank of New York contained a comprehensive discussion of various aspects of this debate. An adaptation of the newsletter is published here in the belief that, regardless of any temporary expedients which may be enacted by the Congress, the need for basic tax reforms is a matter of great importance to all our readers—stockholders and employes alike.

The current debate on taxes has developed many points of view. In some quarters it is objected that any tax reduction will be used only to pay off debt or to add to savings, and would therefore not give the impetus to the economy which is now desired. More generally, however, it is assumed that a tax cut can have a powerful stimulating effect in proportion to its nature, amount, and duration.

The size of the cut generally mentioned is a round $5 billion. There are infinite possibilities for accomplishing this, but whether such a reduction is of permanent value, or will risk further inflation, depends upon the kinds of cuts made. The only sensible reason for considering action on taxes at all is that there are patterns of tax action that can restore prosperity and, with a reversal of the trend of Government expenditures, also restore a balanced budget.

Most of the suggestions heard in and out of Congress do not fit into this pattern. For instance, some have simply divided $5 billion by our population of 173,000,000 and come up with an answer of $28.90 per capita. No employer can hire another man or buy another machine out of a $28.90 tax cut. But a tax cut of $2,890 could make it possible for a private employer to add a man to his payroll. Such a cut may even give the employer the credit base and incentive to raise money and hire five or 10 men.

Other possibilities suggested include reductions in various excise taxes; an increase in the personal income tax exemption from $600 to $700; an 8 per cent cut in all personal income tax rates; and lowering the corporate tax rate seven points to 45 per cent.

While it may be politically popular to cut excise taxes in order to reduce by a few cents the prices of selected goods, there are serious objections from the revenue standpoint. Excise taxes are relatively stable. On the whole such cuts would do comparatively little to stimulate business, and the revenue loss to the Government would tend to be permanent.

For example, it has been suggested that the excise tax on automobiles be reduced from 10 per cent to 5 per cent. With such a cut the value of automobiles sold would have to be doubled to bring in the same revenue. This is most unlikely. To get back the lost revenue we would have to turn to higher income taxes.

The permanent loss of Government revenues from an increase in the personal income tax exemption would be even more serious. Increasing the exemption from $600 to $700 or even $800 would relieve many citizens of any income tax at all and increase the tax burden on others. The argument in favor of this idea is that our economy is geared to consumer expenditures—a mistaken belief. But in any case, as a practical matter, it is apparent that if those who already pay the highest income taxes are to pay even higher taxes, they will have to make higher profits.

Thus the loss in Government revenue from increasing the exemption can be made up in the final analysis only by inflation—that is, by raising prices and incomes to a point where $700 or $800 represents no more real buying power than $600 does now. We could get a strong inflationary spurt from increasing the personal exemption, but we would get no lasting benefit.

Another objection to an increase in the personal income tax exemption is that it does not go to the root of one of the distressing problems of a recession—an increase in the number of unemployed. The best approach to the relief of unemployment is to stimulate business instead of consumption spending. An unemployed worker has more to gain from a reduction in business taxes that brings him a job than he does from a reduction on the tax of those already employed. The economy gains too. His production and paycheck balance off in the market, minimizing inflationary pressure.

If we are not careful we may escape a recession only to fall into the jaws of inflation—the chronic problem of the postwar decade. This fear is responsible for the suggestion that any tax cuts now should be temporary, running anywhere from a few months to a year. The benefits of a total tax forgiveness for only a few weeks could cost the Government more than $5 billion, and the effect probably would be like that of the veterans' bonus payment back in 1936—a temporary bulge in retail trade followed later on by higher taxes, a renewed slump.

The longer a tax cut continues the more enduring its stimulating ef-

orable climate should be fundamental in any Federal tax legislation the Congress enacts

fects. Best of all is permanent reform which, with rapid curtailment of emergency expenditures, could provide revenues to overbalance the budget in prosperous years.

Of the proposals discussed, the best one appears to be the Sadlak-Herlong plan for reforming the personal and corporate income tax progression. Representative Sadlak (R-Conn.) and Representative Herlong (D-Fla.) have introduced identical bills in the House providing for five annual reductions in individual and corporate income taxes. Step by step, the rates on both would be lowered to a maximum of 42 per cent. The maximum corporate rate is now 52 per cent (54 per cent if a consolidated tax return is filed) and the tax on individuals progresses to a maximum of 91 per cent.

As a matter of fact, a 5 point reduction in the corporate income tax rate has been scheduled by law ever since 1954, but it has been postponed year after year. As matters stand, the tax rate on American corporations is among the highest in the world. It is so high that it discourages new capital investment.

Today there is a tendency to forget that many of our great enterprises were founded and expanded when income taxes were much lower or nonexistent. A few large enterprises have emerged more recently by the route of mergers, or with the special help of Government contracts and accelerated amortization of facilities. But finding people with money to risk to finance a new idea is difficult. And those who start a new firm find the taxgatherer waiting on the threshold of success to take, in taxes, the bulk of the money that could be plowed back into tools and machinery to provide more jobs.

Sixteen thousand dollars is an extremely modest sum as capital requirement for a business. A single worker may use tools costing as much. Yet beyond $16,000 in annual taxable income, the individual taxpayer pays half or more in income taxes. If the tax were less, and the business were allowed to grow, the tax collector would get more in taxes from a lower rate on a higher taxable income base.

A reform in the progressive tax rates on both individuals and corporations, as is contemplated in the Sadlak-Herlong bills, offers the best prospects for a quick business recovery, and at the same time avoids inflationary devices.

For no greater calculated loss in Government revenue than other tax cut plans being discussed, the Sadlak-Herlong plan would provide stimulation to forward-looking enterprise. It has the added advantage that it would soon produce equal or greater Government revenues from a more reasonable tax structure. Personal income tax revenues flourish when rates are cut. In fiscal 1956, two years after the 1954 tax cuts, personal income tax revenues were higher than ever before.

A step-by-step lowering of these taxes over a five-year period would likewise relieve the cost-price pinch under which industry now is struggling. Lower taxes would make it possible to maintain the present general price level, if not lower it. Pressures to increase prices would be lessened.

As they are now, the progression of tax rates runs beyond the point of diminishing returns, turning the efforts of many of our smartest people from developing taxable income to minimizing their tax.

The personal income tax progression, which does not stop until it reaches 91 per cent, is a key difficulty in the maintenance of an atmosphere in which business ingenuity can flourish. The individual enterprises seeking risk capital are hard put to find others able to risk capital in blocks of $10,000 and $25,000. The vanishing American is the person with such capital who is willing to risk it in a taxpaying enterprise. And yet such risk capital is essential to an expanding national economy.

Tax reduction is more than a matter of releasing some billions of dollars of buying power into the markets. It makes a world of difference what taxes are changed. Tax rates enter into every business calculation of costs, prices, prospective markets and prospective means for financing expansion, production, and employment. Out of tax reduction we can reap an inflationary whirlwind. Or we can regenerate long-range optimism.

What Congress needs above all in dealing with taxes is imagination and respect for the importance to enterprise of a favorable tax climate and stable money. This is what we tell nations abroad that want to develop. It is time we applied the advice at home. •

"The vanishing American is the person with . . . capital . . . willing to risk it in a taxpaying enterprise."

In Belgium, Rockwells study best route with Caltex dealer.

HOLIDAY ON WHEELS

In their jaunty new sports car, an American couple enjoys an off-beat vacation tour of England and six of the European countries

Louise and Dudley Rockwell are a lively Connecticut couple who live in a free-wheeling way they wouldn't change for anything. Their spur-of-the-moment tour through Europe in the Spring of 1957 is a fairly good example.

The trip had been planned by one of Great Britain's leading sports car makers. The idea was that a group of Americans could buy the cars in this country, be flown by chartered plane to England to take possession of them, go on a three-week jaunt through England and the Continent with most of their expenses paid, and be flown back to the States—at a cost to each car purchaser of just a few hundred dollars more than the price of the same automobile here. The cars would follow on a ship.

The Rockwells heard of all this just three weeks before the touring group was to take off from New York. Neither had ever traveled in Europe, neither had owned a sports car. Both appealed to them.

When the chartered airliner touched down at London Airport early in May, last year, Louise and Dudley Rockwell were aboard.

The four Rockwell teenagers had been left with friends, passports had been obtained, and the Rockwells were smiling out at the soft British Spring, a gleaming new two-seater (parked at the airport, along with the 39 others to be picked up by the rest of the tourists), and the prospect of a 21-day holiday.

Three weeks is not much time, if you're trying to take in seven countries; but the Rockwells feel they made the most of it. "We took it easy, poking around in places that most appealed to us and passing up a lot of the better-known sights. That's the way we like to travel," Louise Rockwell explains. Hand-waving

En route to Paris, some members of the rally stop at a lovely Nuit St. Georges château in Burgundy.

took care of most language problems in the small towns; in larger cities, there was always someone who spoke fluent English. Sidestepping gourmet haunts, the intrepid couple took to dropping in village groceries to shop for picnic makings—and some of their fondest memories are of roadside lunches *al fresco*.

The Rockwells had many good things to say about seeing Europe by auto.

They liked the European system of standardized road signs that use pictographs instead of words to tell the motorist what to expect and what to do . . . the courtesies of European touring associations (in England, one auto club gave each member of the tour a key to its roadside emergency phone booths, even though no one in the group was a club member) . . . the flowers that seemed to be everywhere (one Caltex service station in France was bordered delightfully with Spring plants, and the dealer's helpfulness was just as delightful).

Most Summers, the whole Rockwell family drives to its Maine lodge for a vacation together. Back in New England this Summer, they were looking forward to another European tour "within the next couple of years." Maybe with the entire family next time.

It seems likely that when they *do* try touring Europe again, they'll find themselves waving to a lot more motoring tourists. Last year, visiting vacationists drove over more than 20 million miles in England alone—and the trend is to more and more travel by auto along Europe's roads.

What the Rockwells found, and what other motoring visitors to Europe can hope to see, are shown in the photos on these and the following two pages. •

On the Right Bank of Paris, motorcycle police help rallyists to parking space. The Rockwells were surprised to find Europeans have parking problems, too.

To the sports car owner, tinkering with a motor is an irresistible delight—anywhere, anytime.

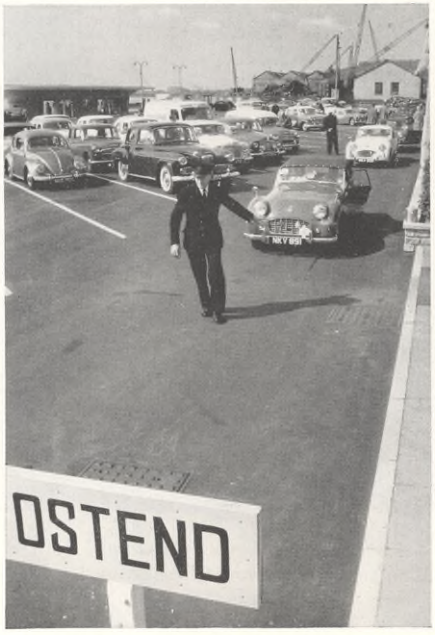
Liederhosen and oompah-ing tubas dominated German night club stop.

Near Interlaken, Switzerland, the Rockwells swap haute cuisine *for a quiet picnic lunch.*

HOLIDAY ON WHEELS

For first-time visitors to Europe, the tour provided plenty of reasons for a return trip

First stop after picking up new car was in Stratford-on-Avon, where Rockwells put up for the night at Shakespeare Hostelrie.



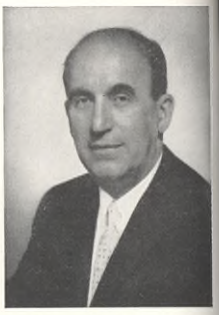
After a Channel crossing from Dover, a drive along French coast to Ostend, at Belgian border.

Back in London at the end of their sports car holiday, the couple pauses during a last-day shopping spree for a look around gaudy, bustling Piccadilly Circus. Next stop was home.

BRIEF AND POINTED

J. HOWARD RAMBIN, JR.

A. W. BAUCUM



ROBERT G. RANKIN

Organization Changes Announced

J. Howard Rambin, Jr., formerly Vice President in charge of the Domestic Producing Department, was elected Senior Vice President in charge of Texaco's world-wide producing interests and activities on April 24. He succeeded the late E. R. Filley. Mr. Rambin formerly was Vice President in charge of the Domestic Producing Department.

A. W. Baucum, formerly General Manager of the Foreign Producing Department (Western Hemisphere and West Africa), was elected Vice President in charge of the Domestic Producing Department on the same date.

Robert G. Rankin, formerly Director of the Budget, has been named Comptroller, effective June 1, when Ernest C. Breeding, who had been with the Company 37 years, retired.

W. R. Love, formerly Assistant Comptroller, has been made Director of the Budget, succeeding Mr. Rankin on June 1.

J. B. Christian, Vice President in charge of Trinidad Operations, has been given the additional responsibility of the Foreign Producing Department (Western Hemisphere and West Africa). E. L. Gorham, Jr., formerly Manager of that Department, has been promoted to General Manager.

"The Favorite Fifty" listing shows Texaco capital stock in third place at the end of last year, as compared with sixth rank at the end of the two preceding years. "The Favorite Fifty" is a list showing the dollar value of shares held by 60 closed-end investment companies and over 165 mutual funds. On another recent listing, showing the common stock holdings of 245 bank-administered common trust funds, Texaco was shown to rank as the sixth most popular holding.

High school teachers have been sent a total of 14,000 new Texaco booklets, *Demonstrations in Science*, by the National Science Teachers' Association. Another 2,000 were distributed through the Texaco Research Center. The booklet is aimed primarily at stimulating interest among high school students in scientific careers. A. P. Burruss of the Texaco Research Center is author of the booklet. He has used the material in the booklet before some 70 adult and student groups.

Big new shopping centers, as characteristic of today as new airports were of the late 1920's, are another important market for Texaco asphalt. Texaco is providing the asphalt cement for roads and parking area of yet another such center, the Southside Shopping Plaza at Richmond, Virginia. The parking area will hold 3,500 cars. An even newer use for asphalt is for paving Nike sites. A chain of these sites near Providence, Rhode Island, has been paved with Texaco asphalt, as have other sites in Connecticut. And speaking of the Nutmeg State, Texaco asphalt is also being used on the new Connecticut Turnpike, which parallels Long Island Sound from the New York State line to New London — then points northeast toward Providence.

Assets of Seaboard Oil Company, a producing company, have been acquired by Texaco Seaboard, Inc., a wholly owned subsidiary organized for that purpose. The Texas Company, which has held approximately a one-third interest in Seaboard Oil since 1933, exchanged 3,660,159 shares of Texaco capital stock for Seaboard's assets, which include net crude reserves of 200 million barrels in the Western Hemisphere. Seaboard Oil Company's production in the United States and in Canada last year was at the rate of approximately 40,000 barrels a day.

Drilling in Cuba, in Las Villas Province, was begun in April by Texaco Petroleum Company, a wholly owned subsidiary of the Texas Company which holds with Cuban Gulf Oil Company concessions in Cuba totaling approximately 1,440,000 acres.

In the foyer of the Biltmore's Grand Ballroom, three visitors to Annual Meeting are registered. Attendance was about 500.

"In sound condition for continued growth"

...that was the optimistic appraisal at this year's Annual Meeting

Checking their raincoats and umbrellas, nearly 500 Texaco shareholders who had braved a driving Spring rain to attend the Company's 1958 Annual Meeting filed into the Grand Ballroom of New York's Biltmore Hotel on April 23 for a first-hand report on Texaco's activities during 1957 and its plans for the future. This was the first time in many years that an Annual Meeting had been held outside The Texas Company's headquarters.

More than 80 per cent of the Company's outstanding shares of capital stock was represented, either in person or by proxy.

Shareholders attending the meeting were welcomed by Augustus C. Long, Chairman of the Board of Directors. Mr. Long, together with J. W. Foley, President of the Company, reviewed Texaco's financial position, operations for the year, and the outlook for the future of The Texas Company and the petroleum industry.

Some of the highlights from Mr. Long's opening statement:

"It is particularly important during this period of readjustment that all business hold the line as best it can if rising prices and inflation are to be successfully combated. We cannot keep on increasing wages with productivity lagging behind such increases, nor can we continue to increase the price of our merchandise and compete in world markets.

"The long-range prospects for the industry throughout the world are very favorable. Last year, free world demand was approximately 16 million barrels a day, an increase of about three per cent over 1956. For 1958, we believe that the increase in demand will be no less than it was last year. Looking even farther ahead, free world demand five years from now should ap-

"In sound condition..."

From the floor, a stockholder reads a statement he has prepared, volunteering his vote of confidence in management.

proach 21 million barrels a day, or about one-third above present levels.

"The Company is in good shape and expects to participate fully in this increased demand. Our world-wide position, particularly in the Western Hemisphere, is stronger than ever with respect to reserves, production, refining, and marketing. We have great faith in the future and we plan to continue a substantial program of capital expenditures."

Mr. Foley observed: "The Company markets more than 1,000 separate quality products, some in large volume and others—specialty products—in comparatively small volume. Increased emphasis is being placed on marketing the full line of products with the help of intensified market research. In support of our salesmen and Texaco dealers, the Company is carrying out the biggest advertising and sales promotion campaign in our history.

"Major expansion programs are going forward at Jefferson Chemical Company and Texas-U. S. Chemical Company, both 50 per cent owned, to meet the anticipated increase in demand for such major products as ethylene glycol, butadiene, synthetic rubber.

"In addition to the studies being made at our four major laboratories, we have research contracts at 15 different universities and institutes in this country and in Europe. Since World War II our staff of scientists has been steadily increased. Today one out of every 22 employes in the United States is directly connected with research and technical activities."

One of the main purposes of a corporation's Annual Meetings is, of course, the face-to-face opportunity it gives the stockholder to ask questions and comment on the way his investment is being cared for by the management in whose trust he has placed that investment. The opportunity was not passed up. Early in the discussion period, following the remarks by Chairman Long and President Foley, one stockholder took the floor to ask to what extent the Company's top management keeps itself intimately familiar with Texaco's world-wide operations.

The answer, from Mr. Long:

"As to the amount of travel that top management does, I don't think there is a company in the United States in which the management travels more than the management of The Texas Company .... This year, I have been in California once, I have been in Texas once, I have been in Trinidad twice. Last year I was abroad in Europe twice .... I was in Texas three or four times, and so it goes.

"I think top management of this Company know the properties you shareholders own, and you can rest assured we are going to get out and see them, and that we don't rely on other people to look them over and come back with their impressions .... Mr. Foley has traveled extensively. All of our vice presidents travel extensively."

In the audience at the Biltmore were a great many women. One, whose attendance at Texaco's Annual Meetings extends over many years, took advantage of the chance to talk directly with the Company's executives by delivering these remarks:

"I have come from Washington to attend this meeting, which is probably the 22nd or 23rd Annual Meeting . . . I have attended. I remember back in 1935, '36, and '37 when we used to meet in a small room in the Chrysler Building. I timidly went to my first meeting —I think I was the only woman in the room—and there were very few stockholders there ....

"Certainly, the way this Company has grown as evidenced today by the attendance at this meeting is something we should give thought to and, of course, has been possible because of the ability, the quality of the management, the courage of their decisions.

"We are living in a time when more and more attacks are going to be made upon business—its bigness, its success, the size of its profits. . . . You will find many times that these attacks are made by people who have no business experience."

In all, the combined report made by Texaco's top two executives at the Biltmore meeting covered 21 typewritten pages.

Particularly heartening to everyone in the audience was this remark by Mr. Foley: "I share completely Mr. Long's optimism for the future, and . . . wish to assure you the Company is in sound condition for continued growth and development." •

Speaking from the dais, Chairman Long reviews Company activities for the Annual Meeting's record-breaking audience.

GET OUT AND GO!

Summer's the time to get out and *go!* It's fun time, filled with bright days at the beach . . .  easy-going rides through the hills  and out into the green, growing country. And what a pleasure, driving today's autos. Pile the kids in, turn the key,  and you're off—humming along the highways,  feeling the power you get from modern fuels like Texaco Sky Chief Su-preme supercharged with Petrox,  or Texaco Fire Chief; the smoothness that fine lubricants like Havoline Special 10W-30—the all-temperature motor oil—and Marfak  Chassis Lubricant add to any trip. Texaco dealers were friendly 'way back when Locomobiles  were the hottest thing on the road. They're still the best friend your car *ever* had! Take to the road this Summer, and see. Make it a family affair  and carry your Texaco credit card  with you. It's good in every State, and Canada as well.