

# THE TEXACO STAR

J U L Y

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ACTION: HOME FRONT — Loading  
a tank car with Texaco Fire-Chief  
in the battle to get gasoline to  
the United States' East Coast

# THE TEXACO STAR

July, 1942

VOLUME XXIX

NUMBER 2

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## A PUBLICATION OF THE TEXAS COMPANY

*For distribution to employes and stockholders*

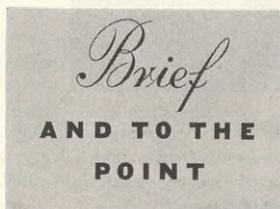
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★ The United States Navy wants to rent Zeiss or Bausch and Lomb binoculars, sizes 6 x 30 and 7 x 50 (these sizes and makes only), for the duration of the war. It is not authorized to receive free loans or gifts, but will pay one dollar. Pack securely, attach tag bearing owner's name and address, and mail to Naval Observatory, Washington, D. C.



★ Post-war planners look to Army "jeeps"—small, tough, all-purpose autos—to do some agricultural work when hostilities are over. United States Department of Agriculture engineers have proved that a jeep can plow an acre on 2.32 gallons of gasoline and can also harrow.

★ "Buying War Bonds is about as much of a sacrifice as putting money in the bank. Money that you can take out after victory—or before, if an emergency should arise. It is money set aside to buy all the things . . . we must all do without today in order to help win the war."—John T. Madden, Chairman of the Greater New York War Bond Pledge Campaign.

★ Camouflage experts so effectively concealed runways of the Army's Windsor Locks Air Base in Connecticut with the help of Texaco Cutback Asphalt that flyers at first had trouble finding where to land.

★ American oil men in 1941 drilled more than 18,000 miles of hole for oil wells, the equivalent of a round-trip through the earth with 2,000 miles to spare, says the American Petroleum Institute. Since 1931 the petroleum industry has drilled 1,044 wells below 10,000 feet, 668 of them in 1940 and 1941.

★ The modern automobile incorporates more than 1,500 patented inventions.

# A Titanic Struggle of Resources

By HAROLD L. ICKES

Secretary of the Interior and Petroleum Coördinator for War



HAROLD L. ICKES

VIEWED either from an individual or from a community or from a national aspect, the war easily outweighs every other consideration. Nothing else is significant.

For us to spend time reminding each other how petroleum embraces all of the natural hydrocarbons, of which natural gas is one, isn't going to get us far. It isn't even interesting to you who know it so well. What *is* important and what *will* help in the prosecution of the war is a consideration of how to harness those hydrocarbons and how to make the best use of them in licking the tar out of millions of cut-throat pirates.

During the past decade or so, when Hitler and his "co-hordes" were planning for war, we in this country were planning peacefully for the conservation of our petroleum resources. We were learning how to recover oil and natural gas efficiently and with sharply decreasing waste. The men of *your* industry and your cousins in the *oil* industry, the state conservation authorities, and the Federal agencies were working together. If it is true—and I have heard it said—that the oil industry and all of its related branches, including your own, gave the country its first and best lesson in wartime team-work, it was due, I have no doubt, to the practice you had during those days when, together, you were learning the alphabet and the subsequent lessons of your industry. In doing those things, you were not planning for war, yet you were, surprisingly enough, making it possible for the country to be ready if war should come at least so far as your industry was concerned.

Much to Hitler's despair we *still* have the greatest petroleum resources of any country in the world; and to his increasing dismay he knows that enough natural gas is available in the underground reservoirs to do the job of lifting to the surface the oil that will ultimately blow him and all his stooges in—well, I won't name the place; you can fill it in for yourselves.

Looking back over the road that we have traveled, which at times has been quite rocky and which frequently has meandered through uncharted lands, I am frankly amazed at, but grateful for, the things which have been learned and the things which have been done. Without that knowledge and without those accomplishments, the winning of this war would be made immeasurably more difficult. This is the same as saying that without petroleum, and without natural gas, we could not win this war within the time which it will now take us. Certainly, we could not win it as it is to be won if we still had to depend upon the gas and oil production practices which were customary during the decade which followed the first World War.

If there be anyone who doubts this statement, let him look at the Cotton Valley field here in the State of Louisiana. In 1924, when this field was being developed, oil was discharged into earthen reservoirs, with no attempt either to restrict it or to conserve the enormous quantities of gas produced. In some instances, wells with a daily initial open-flow capacity of as high as 50 million cubic feet were blown into the air for weeks in the hope that the gas wells might turn into oil wells. At times, the atmosphere in the low wooded areas was dense with gas vapors and oil spray.

Such wasteful practices could not help to win a war which depends so much upon petroleum for victory. Today, deeper zones are being produced in the Cotton Valley field. The gas is not being wasted. It is being pumped back underground to aid further in the recovery of oil. The owners of the land and the operators in that field have pooled their interests, big and little alike, to assure the efficient production of gas and oil. That is the kind of coöperation that counts; that is what is becoming more and more the American way. And yet, it really is amazing that we could have learned so much in so short a time. There was a brief period of only 15 years between the worst and the best, between practices which would have delayed the winning of a war and those which will win this war in a minimum of time.

Excerpt from an address delivered before the Annual Natural Gas Convention, New Orleans, Louisiana, May 6, 1942

Winning this war is not the job of any one or of a few of us; it is a job to which every last one of us must apply himself to the utmost. In our common task, we must forget that state lines exist; that there are corporate entities in the gas and oil business. The pilots over Australia, the soldiers driving our tanks and combat cars, and the sailors in the boiler rooms of our warships don't care whether the gasoline and fuel oil that they need come from the Mid-Continent or the Gulf Coast or whether they were produced by this company or by that. They want the *oil*; they want the right *kind* at the right *places* at the right *time*. It is our job to see that they get it. *This job we will not shirk.*

Our principal gas and oil reserves are in the Gulf Coast States; our large oil refineries are located at water terminals on the Gulf Coast and on the East Coast. These two regions, in fact, comprise a single area, with the Gulf Coast the producer and the East Coast the principal consumer. In times of peace, communication between them was maintained by a fleet of tankers which operated between Gulf and Atlantic Coast ports with the regularity of a ferryboat service. More than 95 per cent of the oil consumed along the East Coast was brought in by tankers. Our tanker fleet was entirely adequate for this peacetime service but now we do not have enough tankers to meet all of the wartime requirements. And so new problems have arisen.

Just about a year ago the owners of American tankers were called upon to assign a substantial part of their tonnage for services which were necessary to rebuild to a satisfactory level the oil stocks in the United Kingdom. A second call followed soon thereafter. The removal of these tankers from our own coast service resulted in such a shortage in our transportation facilities that the need for unified action within the oil industry became essential in order that the war needs for oil might be met. Accordingly, the Office of Petroleum Coördinator for National Defense was established by a letter of the President dated May 28, 1941. Now the name has become, more appropriately, Petroleum Coördinator for War. On December 8, 1941, the Petroleum Industry Coun-

cil for National Defense, later called the Petroleum Industry War Council, heard, by radio, the President's address to the Congress and proceeded to make immediate plans to go forward on a war basis.

The East Coast oil industry is now organized to operate as a unit in meeting the essential petroleum needs of that area and it is doing a magnificent job in developing every available means of moving oil overland and by inland waterways. It is no simple matter to change, on short notice, transportation methods which have been years in developing and substitute therefore difficult and costly transportation by tank car, barge, and pipeline. We feel that it is only prudent, however, to prepare for the day when it may be necessary for us to rely entirely on land and inland water transportation to supply oil to the Eastern Seaboard. I believe that the soundest national policy now dictates that we should henceforth operate on the theory that there will be no tankers available for East Coast service. The Army or the Navy may need those tankers elsewhere. We know that we will be called upon to supply more tankers for the war work of the United Nations, including our own, in all parts of the world. And when the call comes, we will not fail our allies or our own armed forces. Besides, we feel that the heroic seamen who man our tankers should not be asked to run the risk of losing their lives, as so many of them have done, in order to bring oil to the East Coast for nonessential uses or even for essential uses, if there is some other way of getting the oil there. Certainly, the life of any sailor is too precious to be sacrificed in order that some safe compatriot may be able to drive to his golf club or go on a fishing trip.

The railroads and the oil companies, working harmoniously and effectively, have done spectacular things in moving enormous quantities of oil by tank car to the East Coast. That movement now is nine times as large as it was during the week before the attack on Pearl Harbor. When we were called upon last Summer for a large number of tankers for the service of our allies, particularly Great Britain, we insisted that tank cars be used as substitute transportation by the companies supplying the East Coast.



"The railroads and the oil companies . . . have done spectacular things in moving quantities of oil by tank car to the East Coast"

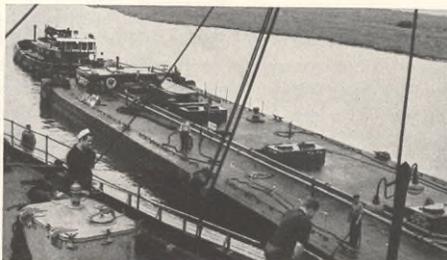
I doubt whether even the most optimistic believed that 600,000 barrels of petroleum could be moved each day into the East Coast states by tank car, as we have been doing recently.

To do this, we have not only pressed into service every unused car that was available, we have drawn heavily upon other parts of the country for tank cars *actually in use*. The Middle West and the Southwest have contributed no less than 30,000 tank cars to move oil to the Eastern Seaboard. The additional cars, plus ingenious and drastic economies of operation, have run up our score to the astounding total that I have mentioned. We hope to make these figures even bigger, but the railroads are definitely near the limit of their oil-carrying capacity.

The gratitude of the entire country, and particularly of the East Coast, is due the oil companies in the Midwest and in the Gulf Coast areas that have cheerfully given up their tank cars, even though it has meant rearranging their transportation facilities, in order to help make up the deficiency in the Atlantic Coast States. And now that the war is getting closer to the Pacific Northwest, these same sources have had to find additional tank cars for the transportation of oil to the states of Oregon and Washington.

We have not relied *exclusively* upon tank cars to supply the Atlantic Coast states. We are taking up old pipelines and are going to re-lay them in such a manner as to shorten the haul to the Eastern Seaboard. Barges are being diverted from their customary runs in order to move more oil up the Mississippi River and thence into the eastern area. More barges and tugs to pull them will be built. We are making many other moves which I cannot explain now, but I do want to say that there are hundreds of men in the oil industry today who are devoting their full time, their training, and experience in order to develop new ways of moving oil northwest and east. Nevertheless, all of these additions, improvements, and efforts may not be enough to make "driving as usual" possible for some time to come, especially along the Atlantic Seaboard.

We who live in the East are prepared to do more walking. We are pooling our transportation in order to see that those who work in essential industries will have the means to get to their jobs. We are rearranging our house heating for next Winter. Those



"Barges are being diverted from their customary runs to move more oil"

of us who can change from oil heating to coal heating are cheerfully doing it. We are going to eliminate every non-essential use of petroleum products in order that there will be oil for our battleships and gasoline for our tanks and for our flying fortresses. The paraffin which might have gone

into candles for birthday cakes and Christmas trees will waterproof a soldier's tent.

Changes of such variety and magnitude cannot be tossed into the placid pool of our national life without setting in motion a whole series of widening ripples. The oil which we cannot move to the East Coast may pile up in your Gulf Coast refineries. As the tanks fill up, it becomes necessary to curtail refinery runs or to pour refined products back into the ground. As refinery runs are curtailed, it becomes necessary to restrict further the production of crude oil. As crude oil production is curtailed, the income of the crude oil producer is lowered. That makes for problems with the banker and the merchant and affects all phases of our economic life—mine as well as yours. But all adjustments must be made with an eye fixed upon war requirements, everything must be sacrificed to the united resolve of the American people to win the war.

We must not only think of our immediate war requirements; we must also plan and conduct our operations so as to provide a sufficient supply for an indefinitely long period into the future. It is because of the conservation that we have practiced in peacetime that we now have sufficient reserves of precious war resources. We must continue our conservation practices in order to have sufficient reserves to meet the post-war problems of reconstruction. In winning the war we do not want to exhaust our valuable and irreplaceable oil and gas reserves, unless it is literally a matter of liberty or slavery, of life or death.

In winning the war we do not want to lose the things for which we are fighting or the things which make our fighting possible, although if need be, we will, of course, willingly pour out every drop of blood and exhaust every resource to preserve ourselves from the fangs of the werewolf, the hyena, and the jackal.

In some quarters there seems to be an unjustified feeling that state laws and the functioning of state regulatory bodies are no longer necessary or important on the ground that the Federal Government has



# TEXACO HELPS TRAIN ARMY MOTORIZED FORCES



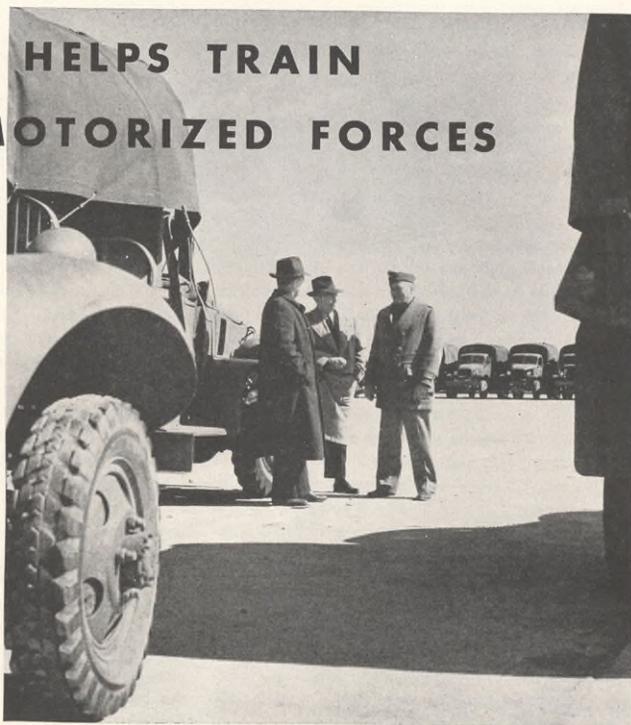
THOUSANDS of young men, these war days, are graduating from family autos to the "jeeps," tanks, trucks, tractors, and half tracks of the United States Army. To help the new soldiers care for the motorized equipment that is rolling to them from factory production lines, Texaco experts are helping to teach lubrication to men at the various Army posts.

American boys, they say, have a way with machines. Their tinkering with home inventions, soap box chariots, and second-hand jalopies has a lot to do with the mechanical skill that makes

the United States a great industrial nation—so great that the American war machines our soldiers are learning to operate are counted on heavily to help win the war.

When it comes to lubricating a military machine, the Army has its own experts and a well-formulated set of lubrication rules for the soldier to follow. But officers have often found men having trouble with lubrication because they lacked specific training, for there's much to learn about lubricating a modern mechanized army. At times an inexperienced soldier would overfill a crankcase with oil. At one fort, trouble developed with truck transmissions. Tracing the trouble to its source, consultants found that each of these particular trucks had a vent on the transmission, transfer case, and differential; and soldiers were found to be innocently parking their trucks in a nearby creek while washing them, submerging the vents.

Lubrication problems like these prompted one of the first of Texaco's "Army Lubrication Schools,"



Lieut. A. T. Peterson welcomes Texaco lubrication instructors Fred Simmel and Paul Fletcher to the Motor Transport School, Miller Field, New York

in which Texaco personnel, by lectures and practical demonstrations, help give the soldiers at various posts special instruction in the principles of lubrication. Courses are arranged by Texaco's sales and technical men. As a supplement to the Army's own training programs, these courses have proved most successful, and Army officers have expressed their appreciation for Texaco's cooperation.

The Texas Company has a reputation for good service in the nation's armed forces. For several years—long before Pearl Harbor—Texaco has regularly been designated by contract as the supplier of a large proportion of the lubricants used by the Army and the Navy. At Army posts, Texaco men have given the rapidly growing motorized forces the benefit of their long experience on lubrication problems, and aided in actual maintenance work.

Nearly all posts have motorized equipment that must be kept rolling, and Texaco's lubrication schools have been found useful at many different Army locations. Officers as well as noncommissioned men at

tend. Where the proportion of experienced men is large, the instruction can be of a more technical nature; sometimes the course aims to teach only fundamentals.

Setting for a school might be the post repair shop, with benches for about 40 men placed at one end of the building and a rack in the center to hold the Army vehicles brought in as demonstration samples. In a basic-principle course, the Texaco instructor might start first with the heart of the vehicle—the engine—and explain how it works and how it must be lubricated. Then he might discuss the air filter, oil filter, transmission, transfer case, universal joints, chassis, splines, propeller shaft bearings, differential,

gram, so that each man can ask as many questions as he likes. One engineer writes: "We have found that not over 30 men is the ideal number for questions. A group larger than this seems to be affected with a mass inferiority complex and questions are not so numerous as with a smaller group."

Careful lubrication of machines will be one deciding factor in the success of America's armed forces in this war. Modern armies travel fast on their wheels and wings and caterpillar treads—but they can't travel without oil. A little friction can cause a disastrous breakdown on the battlefield.

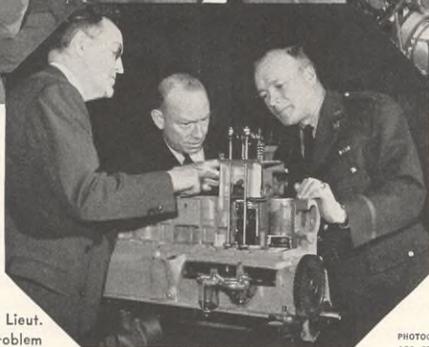
Machines have made warfare a far different thing from what it used to be. They've taken troops out



(Above) Miller Field civilian instructors show soldiers the fine points of carburetion and ignition



(Above) Cutout model of a 1 1/2-ton truck gives the soldiers a practical idea of engine construction



(Right) Simmel, Fletcher, and Lieut. Peterson discuss a lecture problem

PHOTOGRAPHED FOR THE TEXACO STAR BY R. I. NESMITH

water pump, generator, starter, distributor, steering column, wheel bearings, winches, cables, batteries, master brake cylinders, oil coolers, crankcases, and magnetic drain plugs—and the proper care of each part.

While the lecturer talks, another instructor may point out parts of the vehicle that are being discussed, showing worn parts and the effect of poor lubrication, demonstrate the uses of various lubricants, and do actual lubrication work. Sometimes movies are shown, and talks emphasize the work of Texaco in developing and manufacturing lubricants for military use.

Large gatherings are broken up into smaller groups, if possible, at least during part of the pro-

of the trenches. They crash swift holes in the enemy lines, and move soldiers and guns quickly from place to place. The entire United States Army is rapidly being motorized. Its new triangular infantry divisions are supplied with more than 1,200 vehicles apiece. Besides the "peeps," the "jeeps" (so called from their model designation "GP"), the tanks, and the gun carriers used in combat, the modern Army uses a full array of other vehicles—amphibian trucks, café trucks, refrigerator trucks, mobile repair shops, lubrication units.

Armored divisions are even more highly mechanized. Each has 3,283 vehicles, one for every four men. One armored division is made up of wheeled equipment that covers 85 miles of road when it's on

route. During 300 hours of operation, an armored division costs an estimated \$1,000,000 for maintenance alone.

Swift movement of these huge motorized units, and their power to strike quick blows at the enemy, depend largely on the skill of the men who handle maintenance, and the lubricants they use. An Army truck, for example, gets service attention from four different sources: overhaul at maintenance depots, repairs by stationary or mobile shops, minor repairs by company mechanics, and checking by the driver himself. Skilled officers are in charge of maintenance, and every person concerned with the care of a vehicle must have at least a working knowledge of lubrication.

Grease guns and other lubrication equipment used in the Army are largely similar to those used in service stations. The Army also uses numbers of mobile lubrication units equipped with air-operated guns and heating equipment so that the grease may be handled by the air gun in extremely cold weather.

But the variety of lubricants used in the Army is simpler than in civilian use. This is understandable—for in battle or near the combat zone it is not feasible to supply a large number of different lubricants or take time to make delicate selection to suit each different purpose. New machines are being designed with an eye to simplicity of lubrication.

Procedure of lubricating Army vehicles is being standardized, to avoid error. The Army has drawn up diagrams of every piece of equipment, specifying exactly what lubricants are to be used in each part of it. The chart is carried on the vehicle, and instructions are to be followed strictly.

Under Army tutelage, assisted by Texaco's "Lubrication Schools," boys in khaki are becoming real experts at lubricating their machines of war. Some of them, when they entered the Army, knew little more about any motor vehicle than how to drive it. Now they're getting used to the feel



(Above) Miller Field soldier-students learn how valves and pistons work

of working grease through their fingers.

One training ground where Texaco has offered instruction is Miller Field, on the eastern shore of Staten Island, New York. Miller Field boasts a special Motor Transport School, under the supervision of Lieutenant Arthur J. Peterson, to which soldiers are sent for training from various Army posts in the Second Corps area. Students are chosen according to their mechanical aptitude and their desire to become military mechanics; they must also have enough education to

be able to understand engines. For a two-months' period, 300 soldiers at a time are put through a basic course in motor transport which will qualify them to do mechanical work or to enter specialist courses at other Army schools.

Various civilian instructors—including Texaco's—help teach the boys the theory of gasoline engines, and how to disassemble an engine, check it, and put it together again. The Motor Transport School is equipped with all the latest types of Army units. Soldiers practice on them to learn about carburetion and ignition, chassis units, trouble shooting, and the most up-to-date methods of inspection and maintenance. They're given all the latest tools to work with, and not only learn theory but do practical work.

Engineer Fred Simmel and Paul Fletcher of The Texas Company have worked closely with Lieutenant Peterson to give the best possible lubrication instruction at Miller Field, and Texaco's teaching has been an important factor in the success of the Motor Transport School.

At other camps, Texaco's instruction has also met with approval. Lieutenant Colonel F. H. L. Ryder of Fort Leonard Wood, Missouri, writes:

"The lubrication school recently held at this post by your organization was most favorably received and was of inestimable benefit to our personnel.

"It is such splendid coöperation on the part of industry with the armed forces that will place our national defense on a high and efficient basis."



One Army camp uses the Texaco Waterways Service pocket pelorus to teach elementary map-making



The automobile is interwoven with our national economy

EWING GALLOWAY

## Our Petroleum-Borne National Economy

**T**HE AUTOMOBILE is so interwoven with our national economy that its necessary civilian use should and must be continued, declared President W. S. S. Rodgers at The Texas Company's Annual Stockholders' Meeting held in New York April 28. Prompt action, he added, should be taken to supply synthetic rubber for use in manufacturing tires to keep essential civilian automobiles on the road.

"Although the government has announced a program for the manufacture of approximately 700,000 tons of Buna-S rubber annually," he said, "this will not become completely available until 1944. This supply, moreover, is intended solely for military and other essential uses."

The oil industry will probably play an important part in overcoming the rubber shortage, Mr. Rodgers said. He added that the industry was a dominant factor in bringing synthetic rubber to this country's attention, and has now appointed a committee, with himself as chairman, "to make recommendations for increasing the announced program to include some rubber for what we consider essential civilian use.

"I have a great deal of confidence in American ingenuity," said Mr. Rodgers, "and with such a

large supply of used rubber in this country subject to reclamation, in addition to the efforts now being made to manufacture synthetic rubber and to find some other substitute for rubber in tires, I would not be surprised if we should soon find some satisfactory solution to this rather difficult problem."

Texaco's President announced the estimated earnings of the Company and subsidiaries, excluding European subsidiaries, as \$7,900,000 or 73 cents per share for the three months ending March 31. This is, of course, after charges for depreciation, depletion, amortization, and provision for Federal income and excess profits taxes at 1941 rates, and compares with \$6,600,000, or 61 cents per share for the first quarter of 1941. Earnings for the first quarter of this year are after a charge to income of \$5,000,000, which has been set aside as a reserve for additional taxes and other contingencies due to the war.

"While the earnings for the first quarter are satisfactory," Mr. Rodgers said, "they should not be taken as an indication of the earnings for the year 1942. The truth of the matter is that the many serious problems facing the industry and the new problems

constantly arising make it almost impossible to do any long-range forecasting."

He pointed out that the principal unfavorable factors now facing the industry are transportation difficulties, resulting in loss of volume in certain areas and increased distribution costs; the rubber situation; and the cessation of automobile manufacture, which will shortly reduce the number of cars and trucks in use. He indicated as favorable factors the increased demand for petroleum products for government use, including 100-octane aviation gasoline and lease-lend purchases; increased industrial activity, stimulating the sale of high-grade lubricants and fuels; and a new demand for base stocks for synthetic rubber and toluene.

#### **Autos Can Be Kept in Operation**

"It is our belief," he said, "that a large number of the automobiles now on the road can be kept in operation through the next three years or longer, if car owners will exercise due care of their automobiles, and provided a small amount of rubber for retreads can be made available. Every automobile owner should realize that his car is a national asset and is part of the stream of transportation that takes all America to work, to school, and to market, and that it is necessary for him to conserve his car and the tires upon which it runs."

Commenting on prices of petroleum products, Mr.

Rodgers pointed out that since a substantial percentage of petroleum and its products is now moving to the East by tank car and other more expensive methods of transportation, costs have been considerably increased. He added that Petroleum Coördinator Ickes and his staff have recognized the situation and have been "most helpful" in presenting the industry's case to the Office of Price Administration.

#### **Employe-Management Relations Good**

Referring to the Company's industrial relations, Mr. Rodgers said that there had been no "material interruption" in operations in recent years because of differences between management and employes. Bargaining has been carried on with a number of labor organizations affiliated with the A. F. of L. and the C. I. O. and with other organizations not so affiliated, according to the employe's own choice. He pointed out that 50 per cent of Texaco's 25,000 employes in the United States have been with the Company for 10 years or longer.

In conclusion Mr. Rodgers said, "This Company and its employes are doing everything in their power to assist in winning the war, and naturally we are most optimistic on its outcome. Also we will do our utmost to see that this Company is kept in such condition that it will enter the post-war era in a position to supply its share of the world's enormous demand for petroleum products."

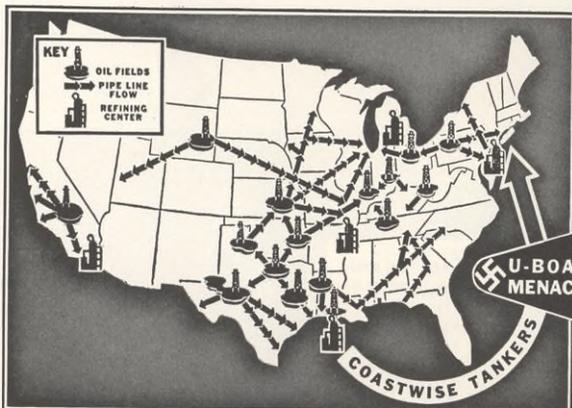


American ingenuity and "know-how" is making tanks better than the enemy's in plants formerly devoted to the manufacture of trucks and passenger cars

GER PHOTO

# STAR CLOSE-UPS

## GASOLINE GOES EAST

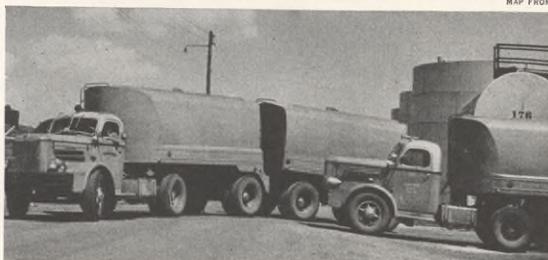


MAP FROM OEN



Axis submarines make the routes of tankers bringing gasoline East unduly hazardous

Behind the guarded gates of refineries, Texaco gasolines are manufactured



Transport trucks (left), now serving wider areas, release railroad tank cars for longer hauls



Tankers shuttle gasoline between inland ports (left); barges bring it East

Tank cars taking petroleum products East have increased from 1,000 to 56,000

ALL PHOTOS IN STAR CLOSE-UPS BY R. I. NESMITH

**STAR**  
**CLOSE-UPS**  
**GASOLINE GOES EAST**

*In a record week last month, 731,520 barrels of petroleum products went East by rail. Some also went to the Pacific Northwest. The East requires 1,300,000 barrels daily*



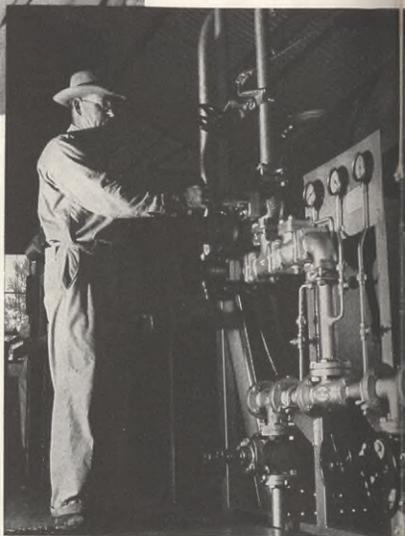
Barges may come in at any hour at a river-front terminal where a pipe line ends



Quantity of gasoline to come by pipe line is checked (above). A machine (right) weighs and adds tetra-ethyl lead



High on a terminal storage tank, a gauger takes a sample of gasoline



Barges approaching a floating dock (below) will load gasoline for distribution many miles up the river



Alongside the dock, crews connect loading lines (left). It will take several hours to load



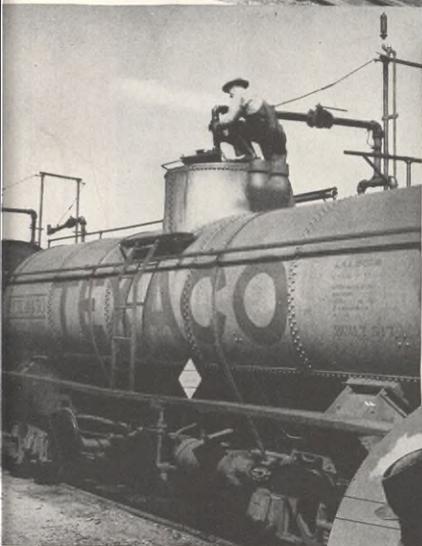
(Right) A workman turns the valve, and gasoline for some of the East's 11,000,000 motor vehicles flows to the barges



LINE  
EAST



Directing tank cars to location in refinery yards (left). Cooperation between railroads and the oil industry has reduced "turn-around" time



All the tank cars shown (right) at the loading rack have only a fraction of the capacity of the average-sized ocean-going petroleum tankship

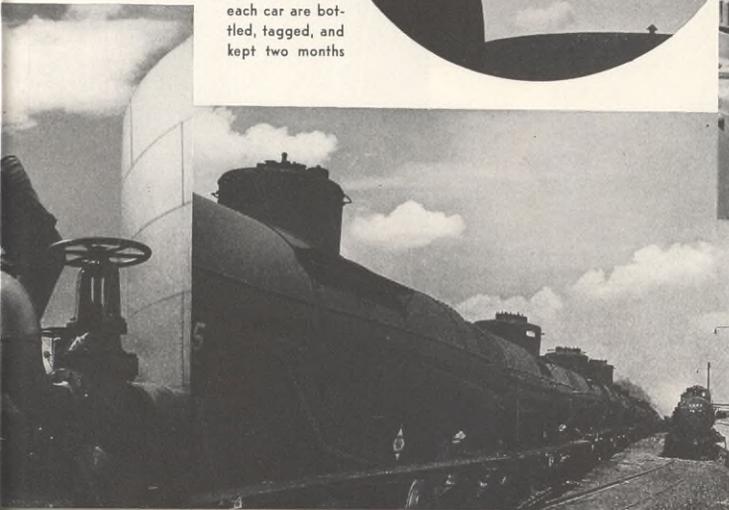


The car shown being loaded above may have rolled into the refinery in the morning. By night it will be on its way to supply gasoline-starved areas

Samples from each car are bottled, tagged, and kept two months



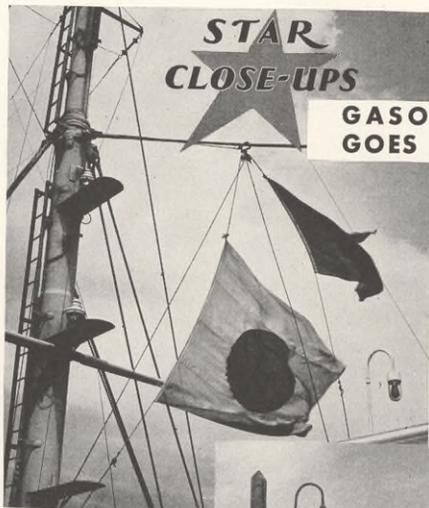
Before the train moves, each tank car dome is officially sealed to prevent thefts and tampering during the trip



(Left) A 70-car trainload of petroleum products leaves the refinery for its destination. It takes more than 300 railroad tank cars to equal the capacity of a single average tanker

**STAR  
CLOSE-UPS**

**GASOLINE  
GOES EAST**



These flags on a tanker mean "Danger—gasoline unloading"



At a Texaco inland terminal a canal barge prepares to take on gasoline



The tanker has unloaded (right) to storage tanks. The loaded barge will head East through a canal



Back to the refinery terminal goes the tanker for a new load of petroleum products



Beneath Old Glory and the Texaco house flag, Texaco employes are serving their country



## WE DIDN'T WAIT TO BE ASKED!

Texaco Employees Bought  
War Bonds and Stamps Early



EMPLOYEES in many departments of The Texas Company grasped an early opportunity to purchase United States War Savings Bonds and Stamps regularly on a voluntary basis before the United States Treasury Department announced its payroll deduction plan.

The results have been excellent, and Texaco's voluntary bond-buyers have been commended by Henry Morgenthau, Jr., Secretary of the Treasury.

Although The Texas Company's voluntary plan is not fully under way in all departments, in the first five months of this year the Company enlisted more than 62 per cent of its personnel to buy Bonds and Stamps regularly.

Texaco has many departments of 100-per-cent Bond and Stamp buyers. Employees in departments where personnel is widely scattered in small groups

have naturally been unable to marshal their forces for bond-buying as quickly as in departments whose members work in concentrated areas.

The Texas Company's average per capita War Bond and Stamp contribution each month has been \$22 per participating employee.

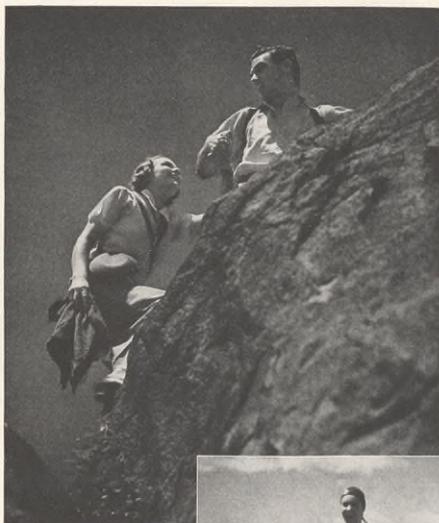


IN George Washington's army there were never more than 25,000 men at any one time. When The Texas Company voluntarily meets the United States Treasury Department's goal for 100 per cent of workers to invest 10 per cent of their pay in War Savings Bonds and Stamps, Texaco's workers for victory will almost equal the number of men in our nation's first army.



# LET'S VACATION NEAR HOME

Patriotic Americans Will Save Gasoline and Tires  
By Finding Their Recreation Within a Few Miles

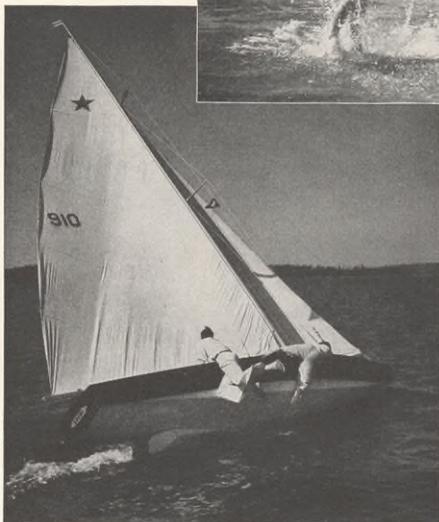


Nothing hardens  
soft leg muscles  
like climbing a  
mountain



KEYSTONE

You don't need a  
beach or sport  
clothing for this  
—but they help



Men with a sailboat won't worry  
about miles per gallon



(Center) Swimming is as much  
fun near home as miles away

Advocates of fuelless locomotion  
recommend this sport

*VACATIONS, to Americans, have usually meant motoring. In this year of war, motoring must be curtailed so that our fighting forces and civilian war workers may not be deprived of fuel or tires. Unsuspected vacation opportunities exist near every community*

(Right) Many public parks—and many back yards—now have good picnic cooking facilities

GENDREAU



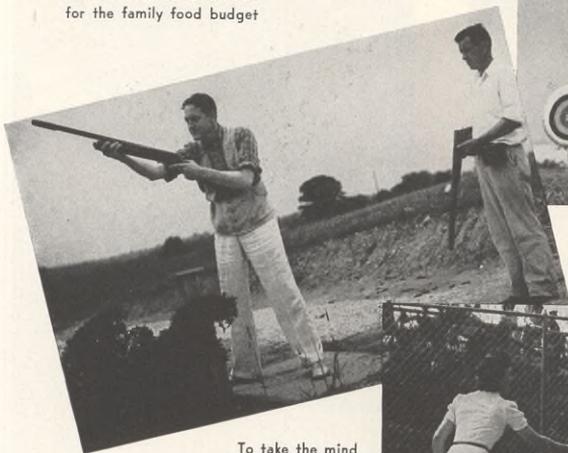
Some find Victory Gardens fun as well as a cushion for the family food budget



KEYSTONE

With a bow and arrow you can spend many happy hours, save tires and gasoline

GENDREAU



Men can be just as happy pulling triggers as tramping on accelerators

To take the mind from motoring, table tennis is an aid to ruralites or urbanites

PHOTOS NOT OTHERWISE CREDITED FROM EWING GALLOWAY





GENDREAU



GALLOWAY

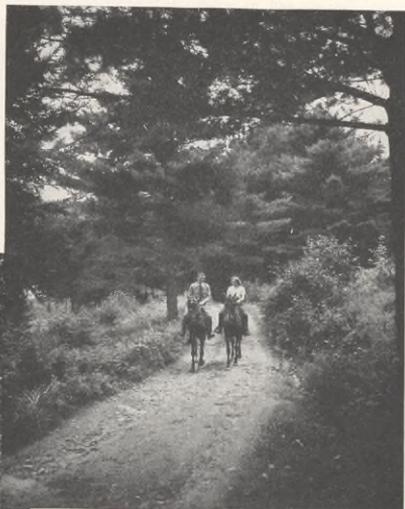
If you must vacation in the wilds (upper left) you can explore afoot

(Left) Fishing may be good—but don't risk tires on bad roads

Walking is popular once more—and patriotic. Try a family hike



WARREN BOYER  
FROM GENDREAU



GEO. FRENCH FROM NESMITH



GALLOWAY

You can still travel the open road (left) if you ride a bike

Horseback riding, a traditional vacation sport, is popular again



This money financed our way to liberty in our first war, but lost its value. Today's War Bonds, backed by a sound, stable Government, are good investments



Philadelphia, December 8, 1777.  
**REGULATIONS.**

Under which the Inhabitants may purchase the enumerated Articles, mentioned in the Proclamation of His Excellency Sir WILLIAM HOWE, K. B. General and Commander in Chief, &c. &c. &c.

- 1<sup>st</sup> **N**O RUM, or SPIRITS of inferior Quality, are to be fold (except by the Importer) at one Time, or to one Person, in any greater Quantity, than one Hoghead, or in any less than ten Gallons, and not without a Permit first obtained for the Quantity intended to be purchased, from the Inspector of the prohibited Articles.
- 2<sup>d</sup> **M**OLASSES is not to be fold (except by the Importer) in any Quantity exceeding one Hoghead, at one Time, nor without a Permit as aforesaid.
- 3<sup>d</sup> **S**ALT may not be fold (except by the Importer) in any Quantity, exceeding one Bushel at one Time, for the Use of one Family, nor without Permit as aforesaid.
- 4<sup>th</sup> **M**EDICINES not to be fold, without a special Permit by Order of the Superintendent General.

By Order of His Excellency Sir WILLIAM HOWE,  
 JOSEPH CALLOWAY, Superintendent General.

KEYSTONE PHOTOS

King George's statue was pulled down (left) in our first war salvage drive

Occupied Philadelphia had its troubles with rationing when the United States fought for its independence

## WE'VE DONE IT BEFORE—

### Rationing and Salvaging Helped Win America's First Liberties

IT'S PART of our history from the early days of America, this buying of printed paper to finance a war, this rummaging for scrap materials, this living in a day of ration cards and shortages. That's the way we won our liberties—by giving millions for war and defense. That's the way we have to retain them.

When the United States asserted its independence in 1776, the shortage of metals, particularly lead, was acute. "Searches" for war materials were organized as salvage drives are today. Housewives donated their pewter ware for melting into musket balls, just as aluminum pots and pans were turned in for war purposes recently. Enthusiastic residents of New York pulled down the leaden statue of George III in New York for casting into bullets. Window weights and sinkers from fish nets were also donated.

Patriots of the Revolution needed ration cards, too. In many localities salt could be obtained only by presenting a card from a local committee saying that the holder was "well affected to the American cause" and was therefore entitled to buy three quarts

of salt for every member of his family, at the "ceiling price" of two shillings six pence a quart.

In the place of the thousands of aircraft observers who now watch the skies along our coasts for enemy planes, patriots of the Revolutionary era on mountain top lookouts were ready to fire cannons or light beacon fires warning of an invader's approach.

The Revolution was financed with millions of dollars worth of so-called "Continental" paper money. With a new and weak nation to guarantee it and an insufficient backing of metal currency, it became "not worth a Continental," but it won our independence.

Today we have the opportunity to preserve these liberties by buying United States War Savings Bonds and Stamps, backed by one of the strongest nations on earth with vast resources of capital, credit, natural resources, and manpower to make them one of the best investments in the world.

We've done it before with salvaging, rationing, and the faith of the people of the United States to invest in their Government. And we can do it again.

## THE TEXAS COMPANY PRESENTS

# PIPELINE

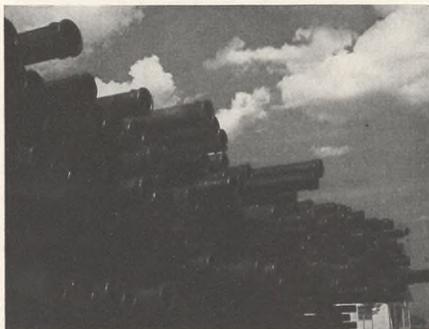
**D**AY AND NIGHT, 24 hours a day, 365 days a year, petroleum and petroleum products flow through more than 118,000 miles of pipe lines throughout the country—crude oil from wells to refineries and certain refined products from refineries to points of distribution.

To record the lives of the employes who keep the oil moving through Texaco's lines The Texas Company has produced, in color and sound, the second in its series of employe-educational motion pictures, *Pipe Line*, which will shortly be shown

to employe groups throughout the United States.

As it would be impossible to show Texaco's widespread pipe line operations in detail, most of the film deals with the Texas-New Mexico Pipe Line Company's line, a typical crude oil pipe line, in which Texaco has a substantial interest. Rather than an attempt to depict the technicalities of pipe line operations, *Pipe Line* is a series of visual impressions of the folks who build and operate the line, what they look like, how they live, work, and play.

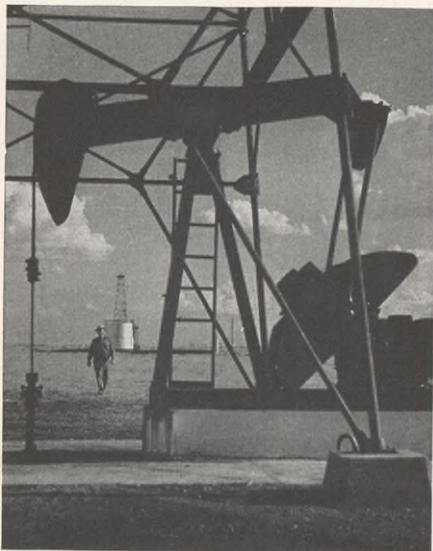
Line riders and walkers, gaugers, engineers, and oil dispatchers are among those with whom the spectator becomes acquainted during the course of the picture. It is interesting to learn that a man on duty is on "tour," pronounced "tower." There is a glimpse of that amazing contraption of knives and rollers called a "go-devil," which is occasionally run through



JOHN HATLEN



JOHN HATLEN

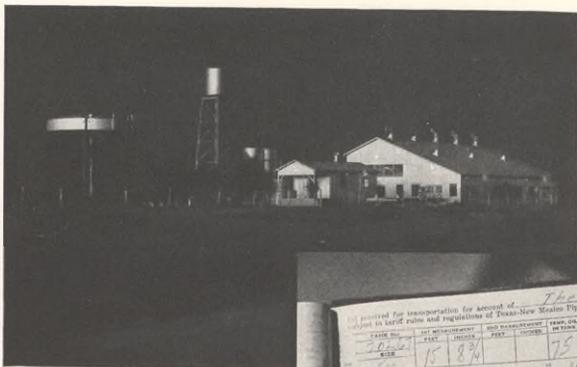


Raw material (top, left) from which an oil transportation line is made



Where a pipe line begins: Gathering lines receive the product of oil wells

To a layman, the many valves (left) of a pipe line look hopelessly confusing; a pipe-liner knows which one to turn



Unusual night view (left) of a pumping station. Pumps are on the job night and day

This (below) is a "run ticket," the record of a shipment of crude oil by pipe line

PHOTOGRAPHS NOT OTHERWISE CREDITED ARE BY WENDELL MACRAE

The men below are taking up a pipe line. Unused pipe lines, re-laid, help in the war effort



Authorized for transportation for account of The Texas Co. REGISTRATION NO. 320687 FOR 8 DYS.

Subject to tariff rates and regulations of Texas-New Mexico Pipe Line Company.

TAKE UP	DATE	LENGTH	FEET	INCHES	FRANK OR OTHER NO.	WEIGHT	NO. OF	GRAVITY	TEMP.	WATER	NO. OF	NO. OF
15	8/24		75	2				38.7				

PROPERTY NUMBER 20 DATE 8-16- (1941)

NO. **230956**

OWNER The Texas Co. TO State of

SHIP BY Gravity

STEEL OR PUMP PURCHASED BY State of GRAVITY OR CONVEYOR SERIAL NUMBER 11111

TIME	DATE	LENGTH	FEET	INCHES	WEIGHT	NO. OF	NO. OF

BEFORE BELOW DESIGNED FOR OTHER PURPOSES

necessity live close at hand, in neat and attractive cottages clustered about the station. Flower beds appear everywhere and great pride is taken in the appearance of the station and surroundings. Recreation facilities of many kinds are provided for the employees and their families who live in these tiny communi-

ties along the route of a pipe line.

*Pipe Line* is a sequel to *Deep Horizons*, the first employe-educational film produced by Texaco, which portrayed the discovery and drilling of an oil well. *Pipe Line* will be available for showing to service clubs and other organizations following its showing before employe groups. Like *Deep Horizons*, *Pipe Line* can be shown on any standard 16-millimeter sound projector.

If the showings of *Deep Horizons* are any indication, *Pipe Line* will be seen by many adults and students throughout the country. At the time of this writing, the record of *Deep Horizons* is a grand total of 1,048 showings seen by 128,567 persons.

Pipe lines have been and are—more so today than ever before—of vital importance to the American way of life we are now fighting to preserve.

# From the Mountains Back of Rio—

ACCORDING to legend, many centuries ago a goat-herd somewhere in Arabia noted with surprise that his goats after eating certain red berries gambled like kids. So he decided to try some of those berries himself and was elated with a feeling of zest and renewed vigor. Thus, says the legend, were discovered the virtues of coffee.

True or not, the fact is that from some such humble origin has evolved the delicious dark beverage made from roasted coffee beans which is now consumed throughout the world. Travel on the magic carpet of thought from Arabia to the state of São Paulo, Brazil, and marvel at the vista of millions of coffee trees, line upon line up to the distant horizon. This is a *fazenda*, one of the greatest treasures of vast Brazil.

It appears that coffee was first brought to Brazil from the Guyanas, below the West Indies. Cultivation was started on a small but promising scale in the vicinity of Rio de Janeiro. Gradually the plantations grew and extended to the mountains about a hundred or so miles from Rio. There the Brazilian



Coffee warehouse in Santos, state of São Paulo, Brazil



Spreading coffee on the drying ground

coffee industry got its real impetus. Fortunes were made and lost on the trees, which bear plentiful crops of red berries, but on the other hand rob the ground of its nourishing elements, so that after a few years the plantation wilts and the soil is barren. Climbing the *sierra* which leads to the watering resorts in southwest Minas, you can see on naked mountainsides row after row of mounds, reminders of long-extinct coffee plantations.

As the soil became exhausted, the plantations gradually spread into the interior of the state of São Paulo—always deeper into the wilderness. Localities in the far northwest of the state of São Paulo which 20 or 30 years ago were inhabited by wild Indians are now dotted with flourishing towns which followed the green wave of coffee plantations.

Luckily, new methods of cultivation and soil stabilization are now being resorted to, so that once decrepit coffee plantations are producing good cotton crops, thus adding to the economic improvement of the country which a decade ago depended almost exclusively on coffee as its principal export product.

Coffee is grown mainly in the states of São Paulo, Minas Gerais, Rio de Janeiro, and Espírito Santo, but the bulk of the production comes from São Paulo and is shipped from the port of Santos, known throughout the world as the coffee port.

The first step in making a coffee plantation is to clear the forest, fell the trees, tear out the stumps, and open up the rich soil. Coffee seeds are planted in nurseries, and when the trees are a couple of feet high they are taken to the field and planted in rows. So rises a new plantation many miles wide and deep. While the plants are growing, the *colonos* (farm hands) plant beans, pumpkins, and other farm products between the rows. The soil must be carefully weeded, and day and night watch must be kept on the *sauvas*, large leaf-clipping ants, which overnight will swarm on trees and in the morning leave them only barren stumps.

So far little, if any, mechanized equipment is used

in tilling the ground for coffee-growing in Brazil.

After four or five years the coffee trees are about six feet high, and in the right season the plantation is a sea of white blossoms. Within a few months the green berries acquire a lovely dark red color. They are then ready for picking by hand. The pickers, mostly women, rapidly pluck the red berries, throwing them into large jute bags which are carted to the drying sheds. At this point coffee first meets Texaco products. Carts, drawn by oxen or mules and lubricated with Texaco Vega Axle Grease, or motor trucks using Texaco gasoline and Texaco Insulated Motor Oil and Marfak, carry the berries to the *terreiro*, the large drying ground, perhaps paved with Texaco Asphalt. Here the coffee is spread out and left to dry in the open air. This process is sometimes completed by mechanical means.

The berries are now dark brown; the outer husk has dried, and must be removed by hullers and burnishers. The hull is not difficult to remove, so the machinery is not complicated and relatively little oil or grease is used. The mechanical equipment is operated generally by steam or diesel engines.

The cream-colored coffee beans are next submitted to various grading processes which separate them according to their size, shape and hardness, after which they are placed in jute bags which when filled weigh 60 kilos (132 pounds). These bags until recently were manufactured with jute coming all the way from India. During recent years a great deal of progress has been made in planting jute in Brazil. Besides, native fibers have been found which serve the purpose very well; thus gradually the importation of Indian raw material will become unnecessary.

Considerable quantities of Texaco Rabtex Oil are used in the process of carding and softening jute

fibers. The process is called batching. The oil is emulsified with water and sprayed on the fiber as it passes through the machine, thus making it pliable and permitting its easy flow through the other processes of preparing the twine with which is woven the cloth used in making the bags.

From the plantation the coffee now travels by rail or by truck down to the port of Santos, where it is stored in enormous warehouses until the time comes for shipment. Again it is picked up by motor trucks and transported to the quays, where on the heads of laborers or by modern belt conveyors the bags are finally moved into the holds of ships for transportation to all the countries of the world, but mostly to the United States, the largest coffee-consuming country and Brazil's most important customer.

This is not the end of the story, because before the coffee becomes the dark, aromatic beverage we enjoy every morning, it must undergo very careful roasting in special machinery, and then be ground and finally packaged so as not to lose its flavor.

Interesting from a conservation viewpoint is a statement that if only one-half the estimated coffee-drinking families in the United States waste a cup of coffee daily by pouring the "leavings" down the sink, 400,000 pounds a day are wasted.

Texaco products have an important rôle in the drama of coffee, not only because they fuel and lubricate mechanical equipment and trucks on the plantations, but also because a vast majority of the railway miles over which millions of bags of coffee pass to Santos from the interior of São Paulo and Minas Gerais are Texaco lubricated—likewise many of the steamers which transport the product to foreign countries.



Expert coffee tasters compare a variety of aromatic coffee blends



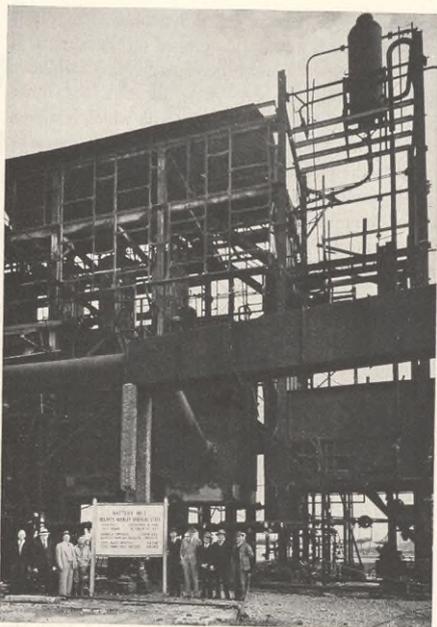
SOZIO FROM GENDREAU



NESMITH

Texaco's drilling crews like hot coffee 24 hours a day





Old timers say farewells to Battery No. 1

## Refinery landmark passes

**BATTERY** No. 1, the Company's first commercial Holmes-Manley Vertical Still and a landmark at Port Arthur Works, has been torn down to make way for progress. Shut down in 1927, when the unit became obsolete, angular old Battery No. 1 stood out against a background of more modern stills.

With the construction of the first Holmes-Manley Vertical Still early in 1920, The Texas Company became one of the pioneers in high pressure cracking. In the first years there were many instances of heart-breaking disappointment, of industrial heroism and devotion to duty. Progress was slow and costly, but step by step the process of learning and improvement went forward. Today, high pressure cracking has reached an impressive degree of safety and efficiency.

Many of the men who worked on this battery have advanced to positions of responsibility and authority. One of the operators has expressed the passing of Battery No. 1 in the following words:

"Some of us were with you when you were born. And right from the start you could kick like ten thousand mules and snort like hundreds of dragons. Men slept in cots nearby to be called to meet your

every whim. But you wrung from excess and waste thousands of barrels of life-blood for a greater system of transportation. With your going, goes something of us. Goodbye, Battery One!"

## Texas-to-Midwest pipe line is begun

**THE** WORLD'S LARGEST oil pipe line, 24 inches in diameter and 550 miles long, from Longview, Texas, to a point in Illinois, will be under construction by the time you read this. A Texas-to-East Coast pipe line has been talked about for several months, and a shorter line, to connect with Middle West transportation facilities, was finally approved as a war measure.

Its completion in December will furnish substantial but not complete relief to areas hard hit by a gasoline famine. The line will have a daily capacity of 300,000 to 350,000 barrels of petroleum, of which the greater portion will be transhipped to points east of the terminus.

The new pipe line will be built for the Government by War Emergency Pipeline, Incorporated, an organization of 11 companies which supply and distribute petroleum and petroleum products in the Atlantic Coast states. It will be a Government-owned, non-profit common carrier.

B. E. Hull, president of The Texas Pipe Line Company, a subsidiary of The Texas Company, is Vice President and General Manager of War Emergency Pipeline, Incorporated, and will supervise actual construction of the line.

The start of the ground survey was announced June 26 by Petroleum Coördinator Harold L. Ickes, with the statement that although the survey would take 30 days to complete, actual laying of pipe could be begun before that time. Assurance was given that 140 miles of pipe would be available during July. The War Production Board gave its approval to the project after a special committee appointed to study it reported that the 125,000 tons of finished steel required could be produced without slackening of steel deliveries to other vital war industries.

PHOTO BY ROBERT YARNALL RICHIE

(Right) Workmen of an Atlantic Coast ship yard come off shift as a new Texaco tanker lies in the fitting-out dock, being readied for service to the United Nations



*"I'll bet my dad knows..."*

"Dad knows most everything.  
He runs the Texaco station down the road.  
Yesterday I heard Judge Evans say  
my Dad's going to keep his car  
running until the war's won.  
I'll bet my Dad knows  
what to do for *your* car, too!"

Betty is right. Her Dad *can* help.  
He can make your car last longer  
with Insulated Havoline or Texaco Motor Oil  
and with Marfak chassis lubrication.  
And now that every mile counts you should  
use Sky Chief or Fire-Chief Gasoline.  
Remember—"Careless today, car-less tomor-  
row!" So see your Texaco Dealer right away.

*You're Welcome at*

**TEXACO DEALERS**



Tune in the TEXACO STAR THEATRE  
every Sunday night—CBS

