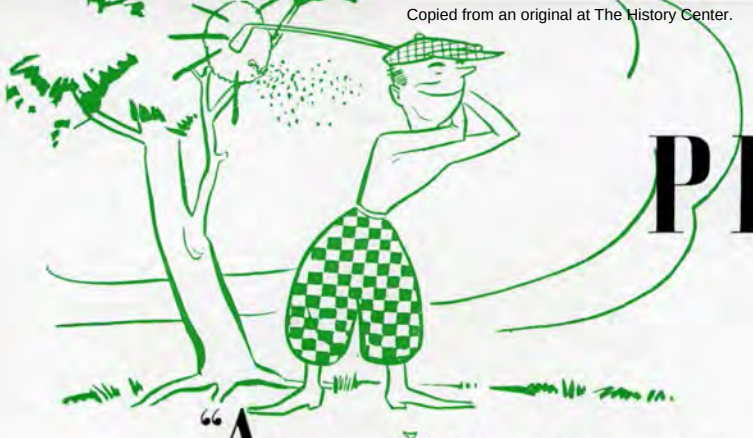
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PLAY SAFE!

Vacation perils would like to spoil your sport . . . but it's easy to stall them

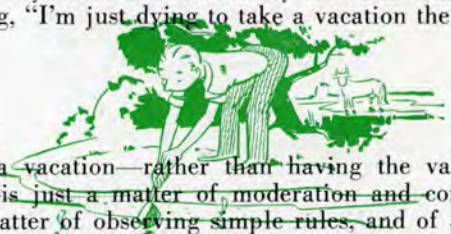
"AH!" BREATHES DAD, taking a gluttonous gulp of the crystal-clear creek water, "this is the stuff we used to get out of the old oaken bucket at home."

"Gimme!" shouts Junior, snatching at the ready-to-bait fishhook.

"My, my!" crows Mother, stooping to inspect, "I've discovered some mushrooms!"

"Don't bother me," interrupts Daughter, "I'm going to get a full tan this afternoon!"

Typical vacation comments, these. Read them carefully; then file them under the label "How NOT to have a pleasant vacation." Sipping typhus germs, snagging yourself on fishhooks, playing tag with toadstools, and soaking up the sun may be something to do—but that sort of activity is recommended only for folks who have been saying, "I'm just dying to take a vacation the *worst way!*"



Taking a vacation—rather than having the vacation take *you*—is just a matter of moderation and common sense. A matter of observing simple rules, and of avoiding the common tendency of trying to make too much of a few short weeks.

First off, advise your party to take the sun gradually. If someone doesn't heed you, bathe his burned skin with a solution of one teaspoonful of boric acid powder to a pint of water. Or apply the various skin creams sold for sunburn.

Equally important is the matter of eating and drinking. Avoid wells and springs which are not approved by the local department of health; avoid streams and creeks completely. Steer clear of anything that "appears to be" a mushroom; and reject food that has been standing for any length of time in the heat: too often, it causes ptomaine poisoning.

In case you're interested, ptomaine poisoning is marked by headaches, muscle pains, intense stomach pains, and severe nausea. These symptoms usually appear within a few hours after eating, and are your warning to call a doctor and go to bed. Meanwhile, if you haven't rid yourself of the trouble-making food, take a stiff emetic.

Common sense, to be sure, will keep your digestive system in trim. But it won't help you very much in connection with another vacation menace: insect bites and stings. Aside from making a stern practice of not swatting hornets' nests off limbs, your only policy here is to sit back like a man and take it.

When the hornet, wasp, or bee, has thrown the hooks into you and gone on his day's business, treat the sore spot with a few drops of household ammonia or common bicarbonate of soda. Boric acid solution also provides quick relief. Before treatment, however, it's a good idea to remove the stinger with a pair of tweezers. This can then be shipped home as a trophy—or simply thrown away.

Of course, if you've been stung by a centipede, tarantula, or scorpion, additional treatment is required, including cauterization of the wound and application of ice compresses.

While you are recovering from insect bites, you may go around gathering flowers.

Avoid, however, a little ivy plant with three-pointed leaves—*poison* ivy. Don't confuse it with the five-pointed leaves of harmless Virginia creeper. Of course, if you *insist* on fondling this treacherous vine, we suggest that you follow the fondling with a strong soap solution rinse, which in turn, should be followed by compresses soaked with boric acid solution.

From all the mention given to boric acid solution, you'll conclude it's a good thing to take along this summer. Right! And so is a first-aid kit.

Tucked away in the glove compartment of your car, a first-aid kit will provide safe, sterilized bandages for all manner of cuts, and a bottle of iodine to paint them with. That's about all you need for minor wounds, assuming, of course, that you'll support the bandages and iodine with a preliminary soap-and-water wash.

If the cut is dangerously deep, and bleeding shows no sign of cessation, send for a doctor immediately. Meanwhile, you can probably halt hemorrhage by pressing the main artery with your fingers, or, better yet, by applying a tourniquet—made, if necessary, from any piece of clothing and a stick.

In between minor and serious cuts is the annoyance, painful enough, of snagging yourself on a fishhook. If that ever happens to you, don't try to pull the hook out; instead, press the hook so that its point comes to the surface close to the spot where it entered. You can then clip off the end with a wire cutter, or file it away, and remove the shank with ease.

While fishing, incidentally, don't decide to slide out of the boat for a swim—unless someone else remains in the boat to keep it near by. For that matter, don't go swimming in deep water at all without a boat along. And, when you go swimming (not for an hour after eating), get yourself accustomed to the water temperature by splashing your wrists and chest; don't submerge yourself suddenly and completely. Above all, don't dive into unfamiliar places.



There—we've taken you through a day of vacation pitfalls and you're still hale and hearty! Keep it up. It's easy to play safe wherever you go—just a matter of common sense.

And now, if you would like additional information on this subject, you can obtain an excellent booklet, "What to Do in Case of Accident," from the superintendent of documents, Washington, District of Columbia. Price, ten cents.—*The Buick Magazine*.

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The Lufkin Line

Published to promote Friendship and Good Will with its customers and friends and to advance the interest of its products by the Lufkin Foundry & Machine Company, Lufkin, Texas.
AL. E. CUDLIPP, Editor

Volume XV | SPRING, 1941 | Number 1

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Oil may decide the winner!

THE COVER
Beautiful Photograph by C. O. Rison, of the Indian Territory Illuminating Oil Company, of Clark Fork of the Yellowstone River, Wyoming. This view is in Shoshone National Forest on "top of the world," on Highway No. 12 between Red Lodge and Cooke City, Montana. Mr. Rison says the trout abound in the stream and bears ramble in the woods. A really beautiful scene in a quiet spot.

An Old Truth in a New Light

The greatest defense program ever planned by any nation in the whole of the world's history is now becoming a reality. Sometimes we wonder whether any man living—more directly, any American—can come anywhere near grasping certain fundamentals that are involved.

Right now the mightiest industrial system the world has ever known is being required to exert its maximum energies in two directions: the old one of providing for peacetime needs, and the new one of insuring the nation against attack.

American industry is big enough to handle both of these jobs at the same time, and to handle them magnificently. There is one qualification to this statement: Many individuals will need to gain a new understanding of, and a new respect for, industry. It cannot haul the double load planned for it if it is met with the same apathy, the same contempt, the same lack of understanding, it has undergone in recent years.

New emergencies have made an old truth suddenly far more evident—the truth that national security, in peaceful world times OR in a great national emergency, necessarily depends upon industry.

It is at once ironic and tragic that it should take a vast war covering nearly half of the earth to make this truth apparent to all Americans!

SALES and SERVICE

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DALLAS, TEXAS
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A. V. Simonson

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Phone 5571
Elvin Read

SEMINOLE, OKLAHOMA
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TULSA, OKLAHOMA
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EXECUTIVE OFFICES AND FACTORY
Lufkin, Texas

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SEVEN MONTHS IN VENEZUELA

LAKE MARACAIBO FROM SHORE ROAD

By ED LAYTON

THE LAKE is some 120 miles long by 60 miles wide at its widest point. Open to the Caribbean at its northern end, with shifting sand bars at its outlet, the water is brackish in the upper portion. The numerous rivers emptying into the lower half discharge such a tremendous quantity of water during the rainy seasons that its level will actually rise during these periods. The fishing is reported excellent and is one of the main week-end recreations of the foreign (white) oil company employes. Water temperature is 80-85 degrees F. Because it is impossible for ships of more than 12 feet draft to cross the bars, even at high tide, only small or lightly-loaded ocean-going freighters are ever seen on the Maracaibo waterfront. The specially-built tankers of 11 feet draft which carry crude from the various fields to the immense refineries on Aruba and Curacao, line up in single file to ride the high tides over the bars. Many native craft, almost exclusively sailboats, from small fishing boats to larger freight schooners and passenger boats, ply the lake's surface; and each weekend there is a Star-boat race between sailing enthusiasts among the oil companies' foreign staffs.

The City of Maracaibo, of some 140,000 population, ranges from the dirt and smells of the typical tropical port to the attractive estates of wealthy upper-class Venezuelans and the well-landscaped grounds of the oil company offices and camps. The surrounding country is desert-like, with relatively little rainfall, and thorn trees and cactus are virtually the only natural foliage. The thorn tree foliage begins about 4½ feet above the ground and appears to have been clipped. This is the "goat line,"



PORTION OF SANTA ROSA VILLAGE on Lake Shore north of Maracaibo.



A NATIVE CHILD. "Banana Belly," actually hookworm, is very prevalent.



EIGHT FOOT TERMITE NEST in the jungle—Ed Layton standing by.

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VENEZUELA HOUSES, MARACAIBO

or the maximum reach of a goat standing on his hind legs. Goats, with a few burros, are virtually the only domestic animals which can forage this area and live.

Except in the Bella Vista section, the location of the newer and better residences and the oil company camps, the majority of Maracaibo's streets are dirty and very narrow, with most of them for one-way traffic only. Driving, for a foreigner, is a gamble, since the streets are full of cars, mostly in taxi service, which are driven any place the driver may happen to fancy—either side or the middle. The average native driver appears to handle his car like a new toy, and the more horns the better. The traffic situation has been complicated recently by the digging of miles of ditch for new water mains —Maracaibo's first—which are left open for weeks, unprotected.

There are almost no street signs or house numbers. Many of the houses are painted in bright colors, most have plastered exteriors, and many have fanciful names posted over their doors. All windows are barred, with solid inside shutters, and almost none have screens. Window glass is unknown except in store windows and the few air-conditioned buildings.

The stores in the business section are hardly recognizable as such to a foreigner. Most are pretty dirty and dusty, with primitive interiors and antiquated fixtures, if any. There are many sidewalk "shops," peddlers, tobacco bootleggers, beggars, and lottery ticket sellers. Prices of everything are very high. The large central produce market is dark, dirty and very smelly. All produce, meat on the hoof, etc., is brought from far down the lake in the native schooners which are slow and unequipped with refrigeration. All meat is slaughtered at night and sold the next day because of lack of cold storage facilities.

Each Monday a drawing is held in the Government lottery. Tickets are peddled by old women and children, and from 1/10 ticket up can be purchased.

Green grass and lawns can be found only in the oil company camps, due to water scarcity. Beautiful flowering trees, in season, with red, white, yellow or purple

HOUSE AT PICA PICA—Only domestic water supply is from roof drainage; collection system shown at right.





One unit of Maracaibo's domestic water supply.



Bachelor Quarters—Lagunillas Camp, V. O. C.

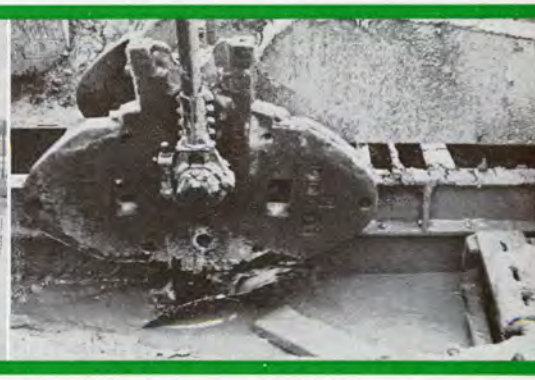


THE BREAD MAN



TYPICAL LUFKIN installation in the Venezuela oil field.

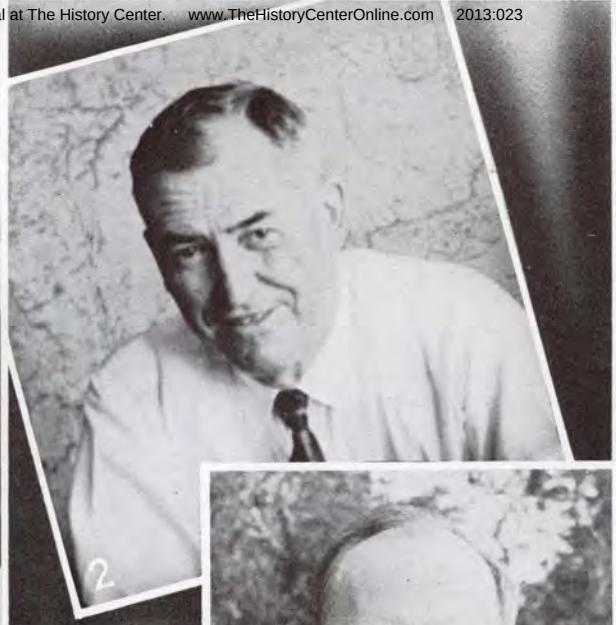




LUFKIN UNIT operates satisfactorily in mud holes or lakes, but of course we do not recommend this as regular practice. These photographs show how Lufkin is able to "take it."

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Oil Men in VENEZUELA COLOMBIA BRAZIL

Officials of the Caribbean Petroleum Company (Shell)

1. N. O. Watson, Gen'l Mgr.
2. R. W. Parkinson, Chief Engr.
3. W. J. Baan, Asst. Chief Engr.
4. E. R. Parr, Gen'l Drlg. Supt.
5. L. J. Van Dijk, Equipment Engineer
6. P. A. Heemskerk, Field Supt.
7. C. L. Babin, Field Supt.
8. J. R. Cree, Prod. Frmn.
9. Left to right: W. C. Dendy, Field Supt., M.G.O.; "Doc" Gardner, M.G.O.; W. B. Cleveland, L.P.C.; Jack Dunlap, M.G.O.; F. J. Pospisil, L.P.C.

Officials of the Lago Petroleum Company

10. G. D. Horne, Elec. Engr; R. F. Mecke, Elec. Frmn.; R. P. Nolan, Refrig. Engr., Internat'l G.E. Co.
11. Ben Beck, Asst. Chief Storekeeper, C.P.C.
12. John Lott, Elect. Frmn.
13. D. A. Campbell, Prod. Frmn.

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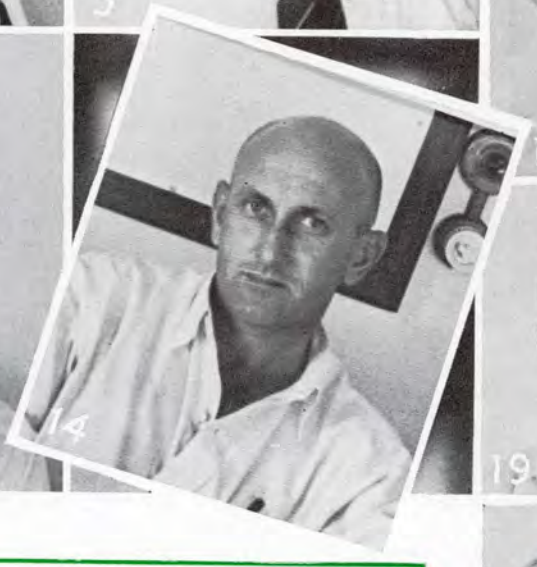




























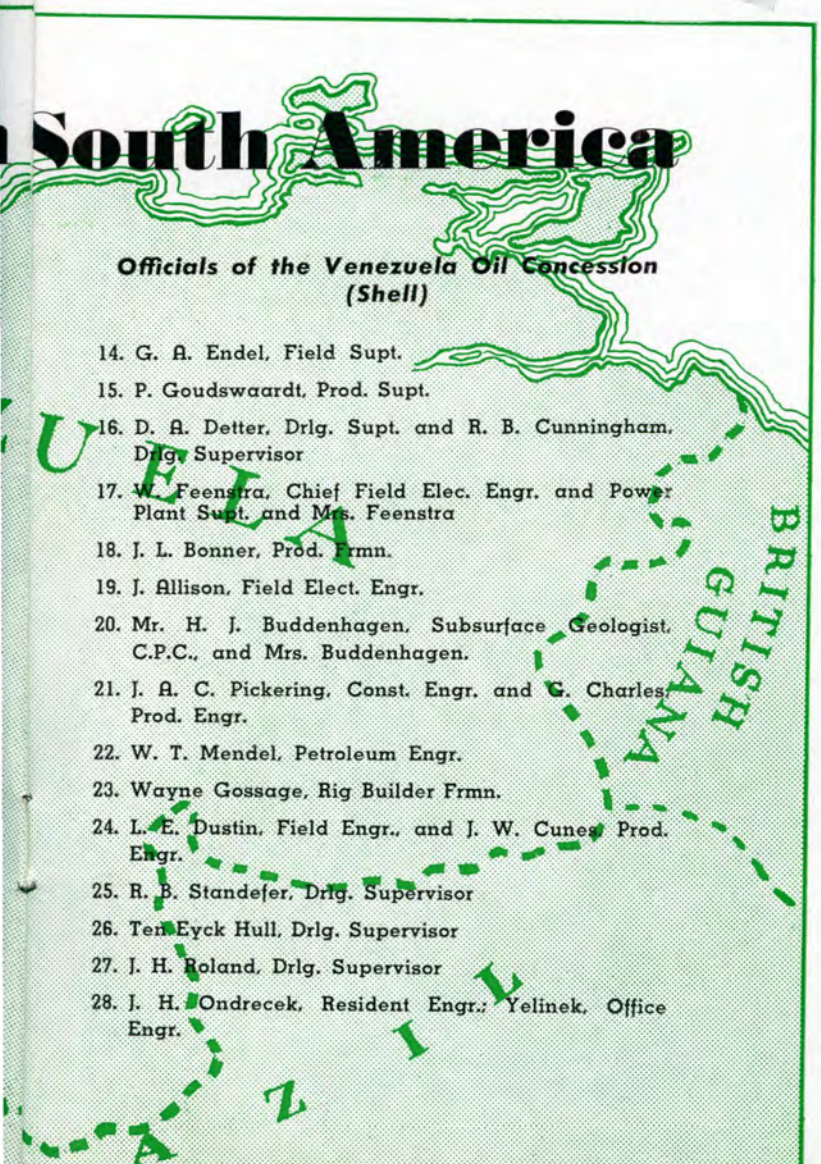




South America

Officials of the Venezuela Oil Concession (Shell)

14. G. A. Endel, Field Supt.
15. P. Goudswaardt, Prod. Supt.
16. D. A. Detter, Drlg. Supt. and R. B. Cunningham, Drlg. Supervisor
17. W. Feenstra, Chief Field Elec. Engr. and Power Plant Supt. and Mrs. Feenstra
18. J. L. Bonner, Prod. Frmn.
19. J. Allison, Field Elect. Engr.
20. Mr. H. J. Buddenhagen, Subsurface Geologist, C.P.C., and Mrs. Buddenhagen.
21. J. A. C. Pickering, Const. Engr. and G. Charles, Prod. Engr.
22. W. T. Mendel, Petroleum Engr.
23. Wayne Gossage, Rig Builder Frmn.
24. L. E. Dustin, Field Engr., and J. W. Cunes, Prod. Engr.
25. R. B. Standefer, Drlg. Supervisor
26. Ten Eyck Hull, Drlg. Supervisor
27. J. H. Roland, Drlg. Supervisor
28. J. H. Ondrecek, Resident Engr.; Yelinek, Office Engr.



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blooms surround some of the larger residences. Cocoanuts, mangoes, bananas and platanos are occasionally found growing along the streets.

The usual atmospheric temperature range is 85-90 degrees F., with personally observed extremes of 76-95 degrees. It is said that an occasional minimum of 69 degrees may be registered during the early spring rainy season. The humidity is always high, with one personal observation of 80%. Mosquitoes are scarce, but sand flies are abundant.

The people are typical of any tropical Latin-American seaport. Upper class Venezuelans are Spanish or perhaps Spanish-Indian, with an occasional admixture of German, Dutch, or English blood. With the peons—the great mass of the population—there is no color line. They vary from plenty black through brown to the lighter Spanish-Indian. Some oriental mixture is observed. There are many West-Indian negroes. It is not uncommon to see a very blonde baby or child in a much darker family. The typical Venezuelan peon is small of stature, small boned, undernourished due to preponderance of starchy rice and platanos in his diet; with little resistance to disease. Few are legally married, due to high cost of the Catholic religious ceremony, and illegality of birth is no stigma. Few can read or write, although the school system is being expanded.

Crossing the lake from Maracaibo via modern passenger and automobile ferry and driving south along the lake road, the country and climate change rapidly. Desert-like country gives way to rank jungle which becomes very dense before Tia Juana is reached. Obviously the rainfall is much heavier here. A single oiled road, built and maintained by the oil companies, runs south from the ferry terminal at Palmarejo through the oil fields, and has recently been extended further south to connect with the Trans-Andean Highway at Mototan. Venezuelan Oil Concessions (Shell), Lago Petroleum (S.O. of N.J.), and Mene Grande (Gulf) oil companies, are all represented in Cabimas, Tia Juana and Lagunillas fields. The many wells on dry land are exclusively Shell, with Mene Grande's within 1000 meters from shore and Lago's starting 1000 meters out and continuing out into the lake to the present drilling limit of five miles.



BED PLATE CASTING made for Orange, Texas, Construction Company—Photo indicates size of castings produced in our Lufkin factory.

Each oil company has established a well-equipped camp in each field for its white employes, and in addition one or more camps for native laborers. Complete recreational facilities are provided in all camps. Most of the food used by the white employes is imported from the U. S. and is expensive. It costs about $1.50 per meal per person to feed the men in a company mess hall.

Each company has its own large steam power plant with transmission and distribution systems. Most pumping wells are electrically driven, with conversion of older wells from gas engine to electric drive being carried on continually.

With the exception of the town of Cabimas which is large enough to show a few urban characteristics, all lake shore villages are small and very primitive. Most originated as fishing villages built on piling over shallow water, with houses connected by plank walks; but many have since spread to the shore. The ancient village of Pueblo Viejo was reputedly used as a repair base for his Caribbean operations by Sir Henry Morgan, the English pirate.

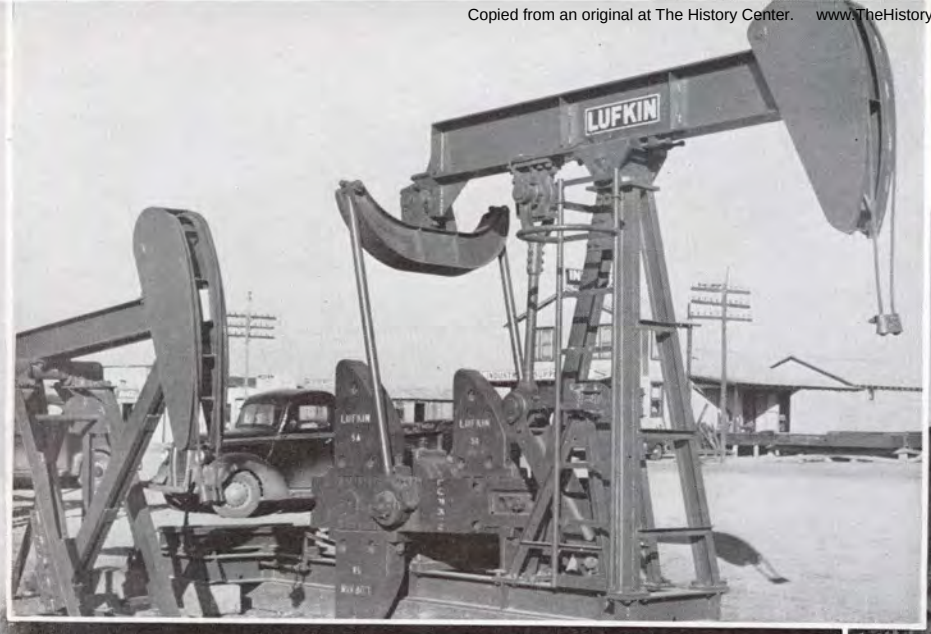
A few small farms have been hewn out of the jungle,

■ CONTINUED ON PAGE 16

SPRING MEETING—Pacific Coast Division, A.P.I., Biltmore Bowl, March 11, 1941. (Find Lufkin's Ed Trout.)



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Left: Lufkin display unit and jack at Kadane corner K. M. A. Field. Below: Lufkin TC-2A-35 Unit with 1325 CU beam, 74" stroke Crank, 28 SPM with 2¾ working barrel in 3" tubing. HUA Minneapolis Moline engine, Johnson lease near Crowell, Texas, The Texas Co.



Operators in the North Texas Fields



Phillips Pet. Co. Vernon Office, left to right: Russell Mclellan, Chief Clerk; C. L. Montgomery, Supt. Vernon field, Hull & Silk pool, K-M-A field, Wichita Falls, Texas; Deacon Holt, General Supt. of Joint Properties; Roy Bobo, Engineer; Harry Cook, Assistant Clerk



Earl M. Horn, General Superintendent of E. C. Oil Company and Supt. for Dillard, White and Duncan and Supt. for H. A. Shaeffer, K-M-A field, Wichita Falls, Texas



British American Oil Co. personnel gathering of men from over Texas at Wichita Falls, from left to right: J. F. McKaig, Wichita Falls District Area Supt; C. W. Lobaugh, Wichita Falls District Foreman; J. C. Bruce, Tulsa Assistant Supt.; Ike Cordell, Pampa District Foreman; Ray J. Griffith, Div. Supt. out of Wichita Falls; Wesley Moore, Oklahoma City, Supt.



Amos Ginn, Supt. Golding & Cochran



O. Floyd Fisher, Production Supt. Mexia field, Wolfson Oil Company



British American Oil Co. personnel gathering of men from over Texas at Wichita Falls, left to right: O. T. Norris, Wichita Falls, Div. Clerk; T. W. Stanley, Wichita Falls Assistant Clerk; J. K. Longacre, East Texas District Foreman; Dan C. Boyer, West Texas District Foreman; H. E. Barton, Wichita Falls Geologist



Walter Pitman, Farm Boss for Bonita and Walnut Bend fields, The Texas Co.



Wolfson Oil Co., Wichita Falls, Texas, left to right: Sam Wolfson, son; Louis Wolfson, father

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LUFKIN EQUIPMENT

North Texas Fields



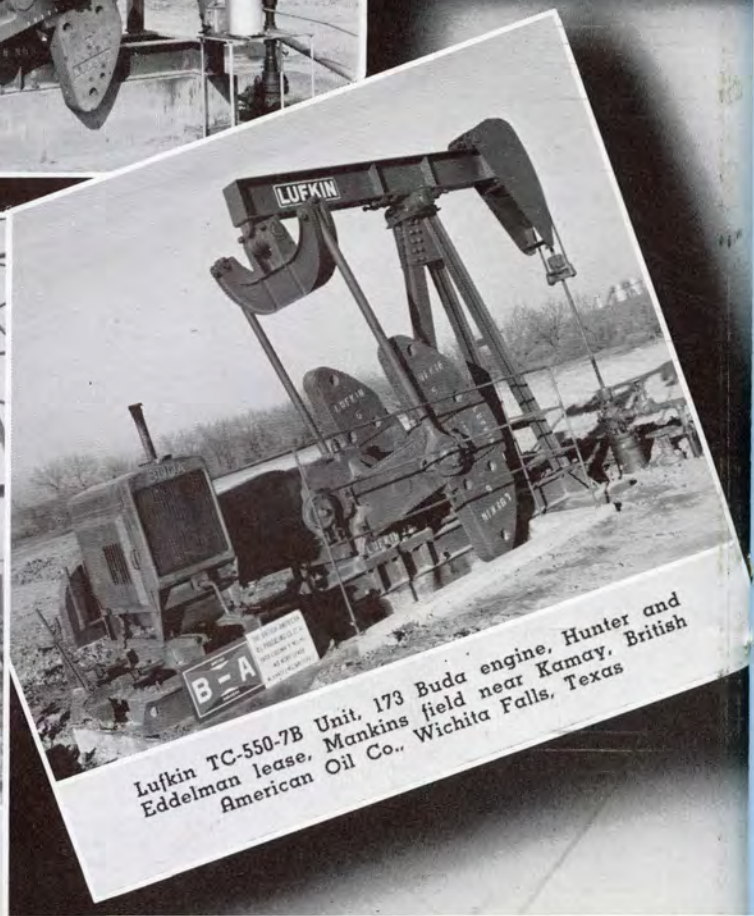
Lufkin TC-3A-22B Unit 28 SPM 2¼ Plunger @ 3000′ International engine, Ross No. 1 Well, Wolfson Oil Co., Mexia, Texas



Lufkin TC-66-5 Unit, Vernon field, Phillips Pet. Co., Vernon, Texas

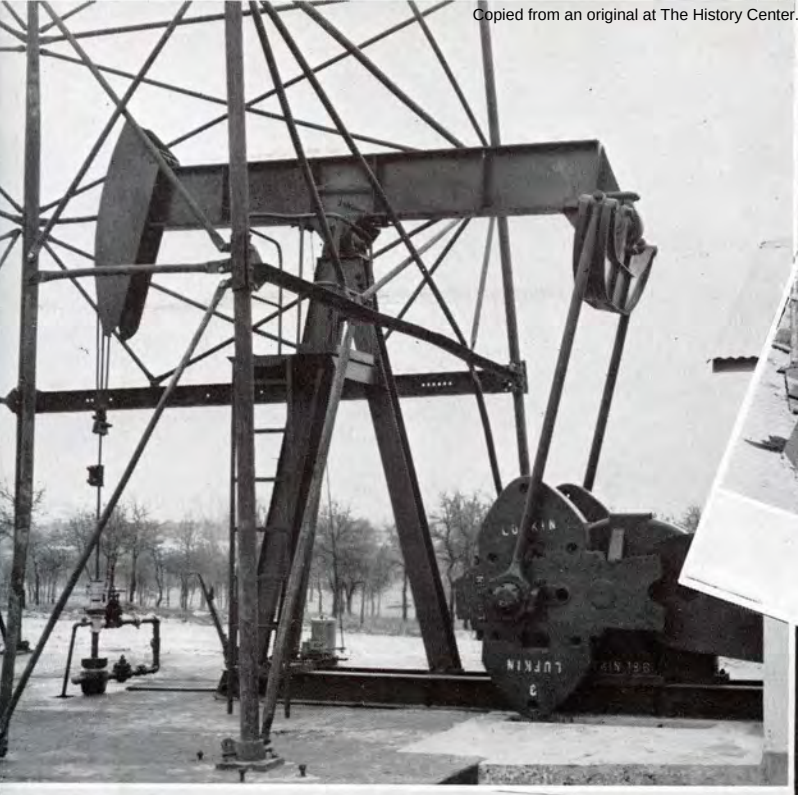


Lufkin TC-2A-36 Unit, 1025 CU 74″ stroke, 28 SPM 3000 ft. production FRH Buda engine, Wolfson Oil Co., Mexia, Texas, Ross No. 2

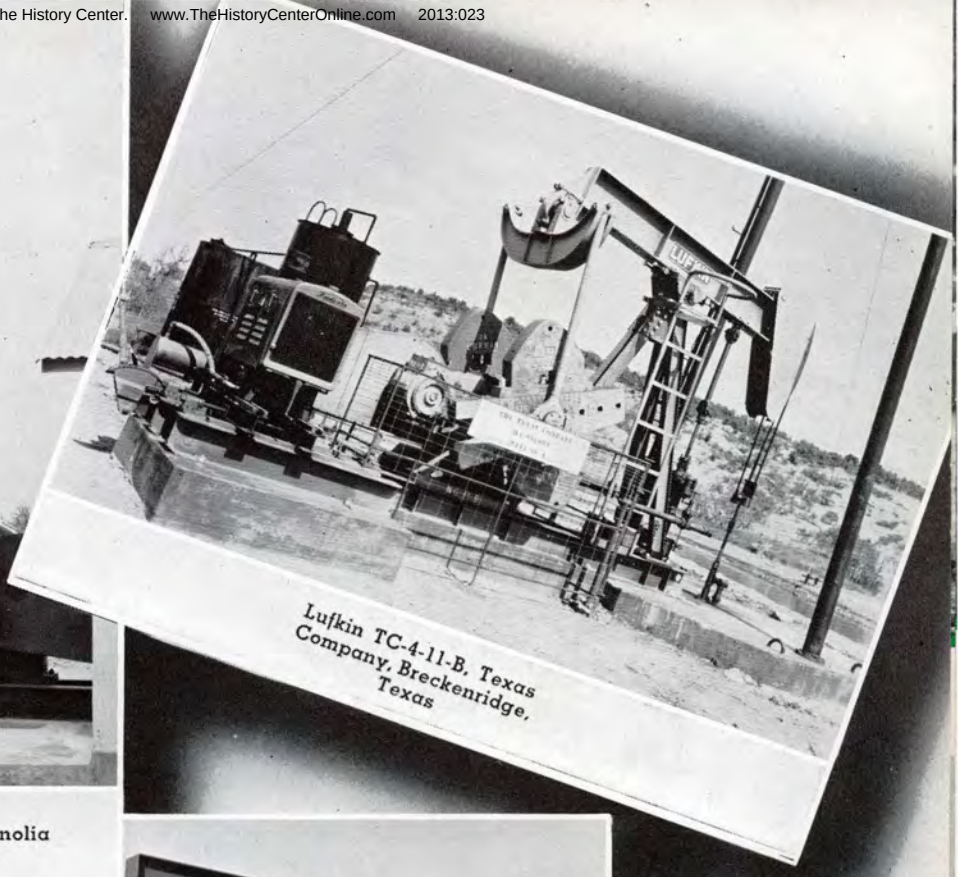


Lufkin TC-550-7B Unit, 173 Buda engine, Hunter and Eddelman lease, Mankins field near Kamay, British American Oil Co., Wichita Falls, Texas

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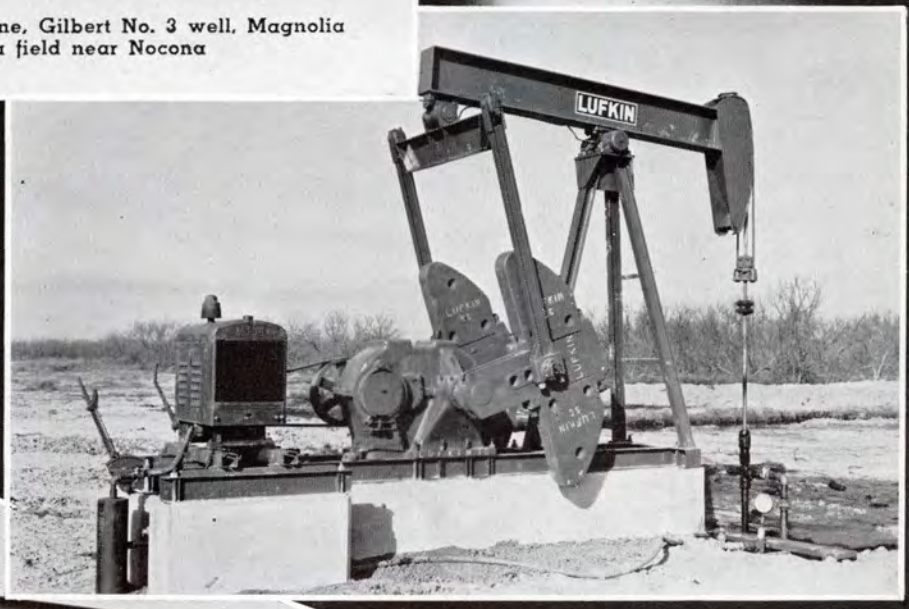


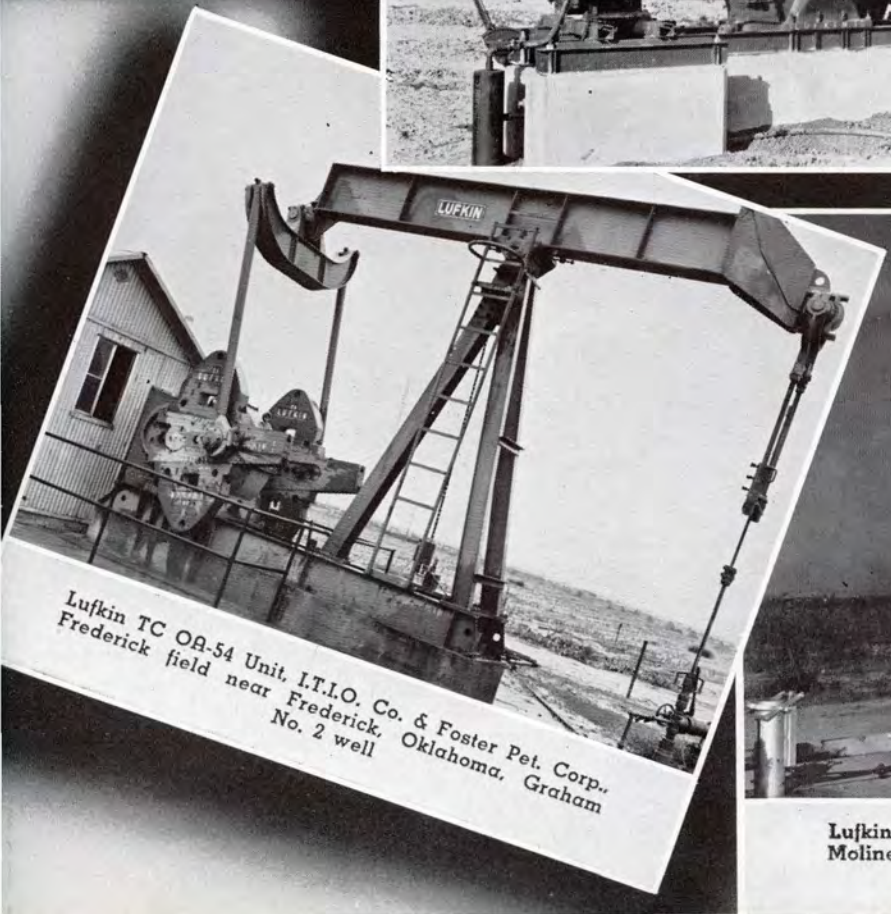
Lufkin TC-3A-18B Reid engine, Gilbert No. 3 well, Magnolia Pet. Co., Bonita field near Nocona



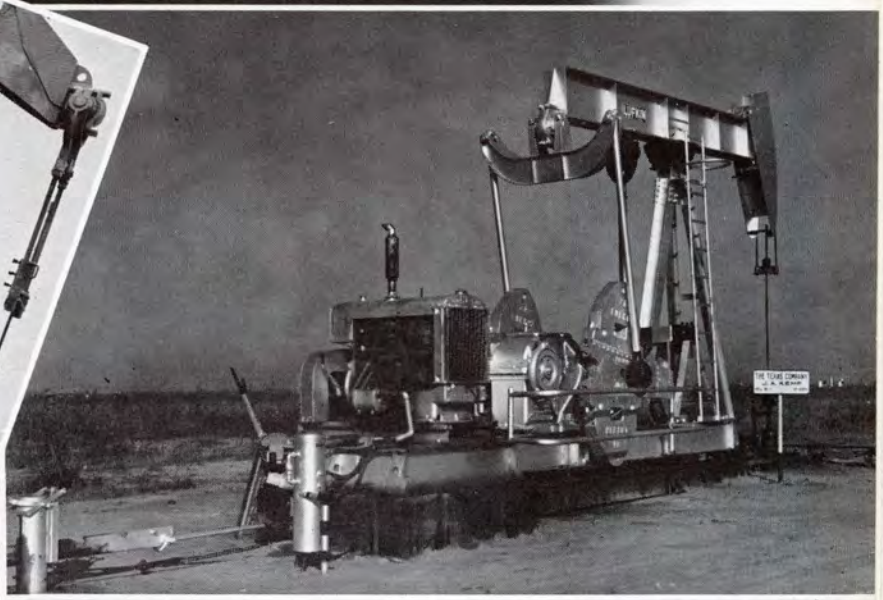
Lufkin TC-4-11-B, Texas Company, Breckenridge, Texas

Lufkin TC-5C-15 Unit LeRoi engine, Nichols lease well No. 3, 4400' production, Hull & Silk pool, Dillard, White and Duncan Oil Co., Wichita Falls, Texas





Lufkin TC OA-54 Unit, I.T.I.O. Co. & Foster Pet. Corp., Frederick field near Frederick, Oklahoma, Graham No. 2 well



Lufkin TC-2A-31D, three-well hook-up bell crank pull, Minneapolis Moline engine, Kemp lease, K-M-A field, Texas Company, Wichita Falls, Texas

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The most famous diamond mine in the world, the Kimberly, South Africa, now abandoned. From this great hole, nearly 3,600 feet deep, came a billion dollars worth of gems.



ROUGH DIAMONDS—fresh from the mines, are sorted with care before being turned over to the cutter to be shaped and polished into sparkling gems. Below: CENTRAL JUNCTION where the haulages convoying the blue ground from the three mines meet.



Adventures in Diamonds

By C. F. GREEVES-CARPENTER

SEVENTY-FIVE years ago, the children of an impoverished farmer named Jacobs were playing outside their dilapidated shack in Hope Town, on the banks of the Orange River in South Africa. The sun seemed particularly bright and the day exceptionally clear. Suddenly one of the children spotted a bright glistening pebble that sparkled and shone as if the sun, itself, were confined within. It was gleefully carried home to be put away with other childish treasures but a kindly fate, in the guise of an ignorant neighbor, intervened on behalf of the Union of South Africa and, as a result, the Union became the world's principal source of diamond production.

The neighbor, Schalk van Niekerk, asked the children's mother if he might buy the curious pebble, but the good vrauw gave it to him. Trader John O'Reilly happened along on one of his infrequent sales trips and van Niekerk handed the glistening stone to him asking him to ascertain if it had any value. Maybe it was wrapped in paper and carelessly thrown in among the trader's samples or maybe it was more carefully handled though O'Reilly had no knowledge of its real worth. Customer after customer of the trader's did not recognize the gem so finally O'Reilly showing the most intelligence so far in the handling of this find, sent it to a noted geologist, Dr. W. C. Atherstone, of Grahamstown who immediately pronounced it a diamond of 21 carats' weight and worth about $2500.

To poor Boer farmers, and to their black servants, this seemed like a staggering find when news of it leaked back to them, and other duties forgotten, these worthy people started searching for these precious stones but almost a year elapsed before another was found some thirty miles down stream from the original location, near the junction of the Orange and Vaal rivers. Another two years passed without any notable find and interest must have lagged considerably but in March,

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The concentrate from the crushing and washing machines is mixed with water which runs over a greased table. The diamonds stick to the grease while the worthless material flows away.



Upper right. A Zula war dance, Wesselton Compound. Within the compounds the "Kaffie" boys spend their leisure time playing games and celebrating feast days.

With rock drills, dynamite and picks, South African diamond miners work their way through a "pipe," or vein, of blue ground.



Trained Alsatian dogs guard the South African diamond mines. Here they are being taught to catch and hold an intruder without injury until help arrives.

1869, a witch doctor picked up a diamond of 83½ carats' weight on the banks of the Orange River. Schalk van Niekerk traded 500 sheep, ten oxen and a horse for this stone, now the famous "Star of South Africa" which he subsequently sold for $55,000.

If excitement ran high with the discovery of the first stone, the witch doctor's find created a stampede and the diamond rush was on in real earnest. It was not, however, until Cecil John Rhodes, adventurous son of an English clergyman, went out to the diamond fields in the early 70's that diamond history really started to be made. First young Rhodes was a digger in the fields and shared the usual hardships but his engineering talent and general efficiency made him so outstanding that he had a rapid rise to fame and fortune. After two years of struggle, he came to grips with Barnett Isaacs, grandson of a Jewish rabbi, and in 1889, the Rhodes Company (now De Beers Consolidated Mines Limited) bought out the Isaacs' controlled Kimberley Central for twenty-five million dollars which was paid in a single check, probably the largest ever issued in the history of the banking world. From being a more or less obscure parson's son to diamond king is quite a leap in a period of approximately fifteen years.

To very few of us is it given to do what Rhodes did for the world at large and for his native, well-loved England in particular. For his country he did much to reclaim an African wilderness and make it one of the richest producing sections in the world. His work lives on after him, for he died in 1902 and since his death the De Beers Company has gradually absorbed all the small, independent companies operating pipe mines and alluvial fields in South Africa. British financiers organized a marketing agency, the Diamond Corporation and the Diamond Trading Company, which are today, as then, the direct channel through which 95% of the world's diamond output must pass before being cut and polished as gem stones, sold as industrial diamonds or as melee.

Worthily succeeding Cecil Rhodes is Sir Ernest

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IN THE GIANT ROTARY PANS the crushed blue ground is mixed with water which runs over a greased table. The diamonds stick to the grease while the worthless material flows away.

Oppenheimer, model of business efficiency and diplomacy for on his shoulders, and that of his close associates, rests the present stability of the world's diamond market.

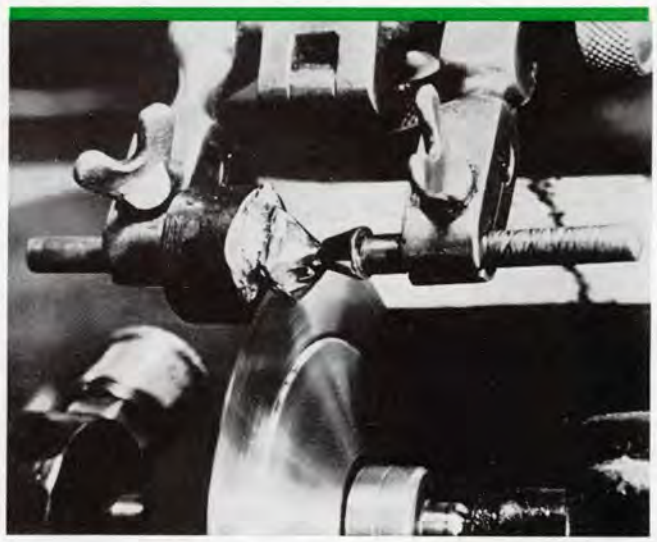
The significance of this responsibility may not be apparent, especially to those who have, quite naturally, only thought of the diamond as a lovely gem stone, a costly adjunct to feminine adornment. War and threat of war has speeded up industry, manufacturing plants in this country are beehives of activity, there is a feverish, but sane, preparedness haste, yet all this would not be as efficient, as quick, were it not for industrial diamonds, those stones not quite good enough to become gem stones. Industrial diamonds are vitally necessary in practically every manufacturing plant.

From the chance finding by the Jacobs child of the first diamond known to have been discovered in South Africa to a present-day mine is a long cry. To see such a mine is a thrilling experience. First, one finds a very large area surrounded by a high electrified wire fence as a precaution in the prevention of theft. Armed guards, accompanied by Alsatian dogs trained to knock over and hold any intruder without doing him bodily harm, patrol the length of the enclosure twenty-four hours a day, three hundred and sixty-five days a year. There is no let-up in vigilance and every aid known to science is engaged to prevent diamonds from being smuggled out by workers to the I. D. B.'s (illicit diamond buyers). Yet in spite of this, the "boys" as the workers are called, go to great length in their attempts to get rich quickly. Some have, in the past, cut their limbs and bound stones in the incisions; others have even swallowed diamonds but complaining, like small boys, of tummy ache, the X-ray has revealed the presence of these gem stones, and they have been retrieved. Today things are difficult for the would-be dishonest worker. The men, including big black Zulus, Kaffirs, various tribesmen, and the small, brown Cape "boys," sign on for a period of six months, during which time they eat, sleep, work and play within the carefully guarded compound. Within it they are allowed to hold their colorful, wild tribal festivals and war-dances, so all kinds of thrills await the bona fide visitor permitted within the enclosure.

Kimberley, once the most famous diamond mine in the world, was worked to a depth of 3600 feet and yielded over a billion dollars worth of gems before being abandoned. Entering the square steel cage or elevator in the shaft of any "pipe" mine, the visitor descends to the floor of the mine, first passing in his descent many other levels that are being worked. Two thousand feet below the earth's surface, the elevator comes to a halt amid a scene of bustling activity. A long line of steel cars, each of which is loaded with blocks of blue ground (resembling rock in appearance) stretches away on its narrow guage tracks into the dim recesses of a tunnel. Paralleling it is another line of moving cars, the empties. As the loaded cars approach an iron chute, the "boys" dump the contents and the empty car is added to the long line on the other track. From the chute the blue ground is dumped into "skips," big steel buckets the size of the elevator in which the visitor descended, and in them is hauled at breath-taking speed to the surface.

In modern diamond mining, the hazards are few. Electric pumps draw off any water before it could do serious damage; dust, that precursor to lung complaints, is dampened with little jets of water running through the hollow drill-bits; timer is expertly placed; and finally, there is an underground hospital on the main level at each mine.

Hidden from sight by the darkness there are many cross-tunnels and, penetrating one of these, the visitor and his guide, see two black "boys" boring into solid rock with diamond-tipped, compressed-air drills. These holes are then loaded with dynamite and the resulting



ROUGH DIAMONDS are sawed into smaller pieces. The saw is tipped with diamond dust to make cutting possible. It takes about eight hours for the saw to cut through a one carat diamond.

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detonation will blast tons of blue ground for haulage to the surface and, at the same time, advance the tunnel a few feet farther into the earth. This, then, is a cul-de-sac, the end of a finished drift.

Having seen all there is for the casual visitor to see below ground, he is taken to the surface to clean, sweet air and sunshine, and it's amazing the new appreciation he will have of these since his brief sojourn in the depths.

At the surface is located the mill in which the "blue" passes through massive, fluted crushing rolls that reduce it, until finally each particle is the size of a small bean. It is then placed in large circular pans in which it is mixed with mud. Revolving toothed arms sweep away the lighter particles. The residue is then shaken through various sizes of sieves and is sloshed up and down in water by gigantic plungers. This above-ground process eliminates about 99% of the blue rock and this is discarded as worthless. The heaviest part, the concentrate, as it is termed, is saved and passed to some eighty or ninety oblong, inclined, shaking tables the surfaces of which are covered with vaseline. Over this, the concentrate, mixed with water, is washed at the same time as it is being shaken violently from side to side. The diamonds adhere to the vaseline, shedding the water while the residue falls off the lower end of each table into a trough. The diamonds collect at the upper end of each table under a flat, hinged and padlocked glass hood. Twice daily the tables are stopped, the hoods unlocked, and the diamonds which have been collected are removed, and this light yellow mass is placed in perforated iron pots that are immersed in boiling water in order to clean the diamonds. More than likely it will be found that the day's toil and the working of some 2000 tons of blue rock will only yield a handful of glittering gems. These are then held for shipment to the order of the Diamond Trading Corporation.



Experts in the New York cutting plant of Baumgold Brothers, inspecting a fresh supply of rough stones.

Chemically, diamonds are the same as charcoal (that is, pure carbon), with this difference that the carbon has crystallized and formed the hardest substance in the world. Because of this unmatchable characteristic the industrial diamond is in great demand. Seventy-five percent of all diamonds are used industrially; two-fifths being applied to the truing of wheels.

The importance of controlling the sale of diamonds is obvious. England, fortunately, still retains that control vested in the Diamond Corporation and the Diamond Trading Company which supervises the sale of more than ninety-five percent of the world's diamond output. Capitalized at two million pounds, all of which is invested in rough diamonds, the company's stock is maintained at a constant level as replenishment is made by the producing companies on an agreed quota basis, and the producers, therefore, regulate production in accordance with the volume of sales.

The world diamond situation in relation to gem stones

■ CONTINUED ON PAGE 17

Twelve perfect gems cut from the huge Jonker diamond after the cutter had finished his work.

Half a million dollar ensemble of diamond necklace, bracelets, rings and earrings, representing the latest thing in diamond jewelry.

The Jonker diamond, 125 carats of gleaming beauty. The largest of 12 perfect gems cut from the rough Jonker which weighed 726 carats.



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Seven Months in Venezuela

■ CONTINUED FROM PAGE 8

their produce being principally corn, beans and goats. The occasional tiny village in the back country jungle has bamboo-walled thatched huts. The only domestic water supply is from roof drainage. The residents of these jungle villages do practically no farming besides raising a little corn. They pick platanos and fruit in the jungle, keep a few chickens, a pig or two, and perhaps a cow. They shoot small deer in the jungle, hunting at night with spotlights and shotguns, and occasionally get a wild pig. Some of the ancient muzzle-loading long-barreled rifles seen now and then are curious affairs, but the importation of both rifles and small arms has been prohibited for years.

The jungle in many places is impenetrable without a machete. The writer discovered that a bamboo thicket, with its innumerable thorns, is extremely dangerous and can cut a man to ribbons. Ants and mosquitoes, of course, are plentiful. Poisonous and constrictor snakes are numerous but seldom seen. Quiet and apparently lifeless by day, with few birds evident, the jungle wakes up at dusk. Bands of howler and spider monkeys in the trees, and flocks of screaming parrots overhead provide plenty of noise. The jaguar makes good hunting, and the colorful iguana is much prized for its succulent meat.

To a person accustomed to driving a car in the U. S., automobile operation on the lake road appears extremely hazardous. The national speed limit is 45 kilometers per hour—28.5 miles—and for good reason. It is not only necessary to dodge peons, naked children, pigs, burros, chickens and cattle (the many goats are too smart to get hit) but the average native driver holds the middle of the road until forced to move over. And he is likely to suddenly stop anywhere at any time without warning. In Maracaibo all electric horns are taboo, and by accepted convention the right-of-way belongs to the driver who toots first. Consequently all drivers honk continuously, and the bedlam of rubber bulb horns, many of them asthmatic, is terrific. A large number of native-owned cars have their front wheels toed in at the top. This is apparently king-pin wear, since their owners never give them any attention beyond gas, oil and water so long as they will run.

A driver's license costs $50.00 but is good for life. In addition to this document, the foreign driver must have in his possession his passport, vaccination, health and good conduct certificates, a statement certifying that he is not a political agitator, his identification cedula with photographs and fingerprints, and his bill of sale if the car is privately owned.

Miscellaneous sidelights: Because of the bugs, a spray gun is standard equipment in every bedroom in Company camps. Most Venezuelans sleep under netting, since window screens are lacking. Due to the high humidity, it is necessary to burn a 100 watt lamp in each clothes closet to prevent the rapid growth of green hair on shoes, leather luggage and wool clothes. Before he left the States, the writer was warned that a hat and sun glasses were absolutely essential. He used neither, although a hat would undoubtedly be of use during a hard rainy season. Because of the higher concentration of actinic rays in the tropics, an exposure meter is a useful accessory for picture-taking. The light fools one.

A "sack of beer" is not a few bottles in a paper bag. The standard shipping package is 60 bottles, each in a straw cone, sewn into heavy jute sacking to make a rectangular package. These sacks are tossed on and off boats and trucks, and are carried through the mountains on burro-back with few bottles ever broken. Retail, beer is 30c per bottle and cannot be purchased cold except in the larger towns or in Company camps.

Bourbon whiskey is unknown. The much-touted "cheap imported Scotch" of which the writer heard in the States, was also non-existent. It cost as much as $12.00 per fifth last December. The only cheap drink is native white rum, plenty powerful, and aged perhaps a couple of weeks. $1.50 per quart.

White Owl cigars are 30c each. Native cigars, not bad, are 2c each and up. Native cigarettes ("Firecrackers") are 15c for 15. U. S. cigarettes are 75c per pack tax-stamped and 50c from bootleggers. There is no Venezuelan-made pipe tobacco. The writer tired of paying 80c per small tin of P.A., much of it mildewed, and had a pound of his favorite smoking mailed from the States. The import duty was almost $9.00; and thenceforth P.A. was good enough. No trouble is experienced with tobacco drying out, but quite the opposite. One can tie a knot in a cigar any time. All prices mentioned are the U. S. equivalent of Venezuelan currency.





YOUTHFUL BUILDERS — Billy Douglas, left, and Bobby Schuller, right, sons of Lufkin Foundry employees, construct miniature Lufkin unit assemblies from "Sets now available in most 5 and 10 cent stores."

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DOLEY OIL COMPANY
INCORPORATED, DELAWARE
Producers of Petroleum
CLAYTON, NEW JERSEY

BRANCH OFFICE:
HAYS, KANSAS

March 25, 1941

Mr. Walter C. Trout, President
Lurkin Foundry and Machine Co
Lurkin, Texas

Dear Mr. Trout:-

The attached snap shot was taken at the Doley #1Joy well in the NE-NW-NE-section 14-12-18W Ellis County, Kansas, in the Walters pool. It is pumping from a depth of 3676 feet from the Arbuckle Dolomite. The well was completed in August 1939 for a potential of 408 barrels per day. It has been producing a minimum allowable of 450 barrels per month of 27 gravity oil. The LUFKIN jack is around 25 horse power, I believe, engined with a Waukesha gas fueled engine. This outfit has not caused a moment's trouble even in the coldest weather. The Gauger for the Stanolind remarked during a severe cold spell in the winter of 1939 when about every other well in the field was unable to start up the pumps on account of the extreme cold; that the Doley #1 Joy was the only well able to go ahead without difficulty.. In fact it was the only well pumping for a time.

Our Koblitz #2 well completed for 3745 barrels per day last November 19th has been working just as efficiently. Mr. E. DeWitt Doley, the Field Superintendent is thoroughly sold on the Lurkin Pumping Jack and the Waukesha natural Gas fueled engine.

Doley Oil Company is about to drill several other wells, and if they are successful producers, it appears we will need some more Lufkin pumping outfits.

Sincerely yours,
Doley Oil Company,
Ernest J. Doley,
President.

EJD/m.

has not caused a moment's trouble



The picture shows E. DeWitt Doley, Superintendent at the Joy No. 1 well, with Mr. Ernest J. Doley, President Doley Oil Company, and Mrs. Ernest J. Doley, the Rabbit's Foot of the Doley Oil Company, standing by.

WHAT ONE MAN THINKS OF LUFKIN UNITS—The above unsolicited letter from Mr. Ernest J. Doley, President Doley Oil Company, speaks volumes for Lufkin Equipment. The fact that Lufkin has supplied more pumping equipment than all other manufacturers combined for the oil fields of the world is additional testimony.

Adventures in Diamonds

■ CONTINUED FROM PAGE 15

and industrial diamonds, has changed somewhat since the European war, though sales control is still rigidly maintained in London. Before the war there were some 30,000 diamond cutters and polishers employed in Belgium and Holland so that it is only natural that Antwerp and Amsterdam were the world's diamond centers in those days. The war has changed all that. The workers, for one thing, have been mobilized, are working in other industries, or have been killed, and, for another, the British are reported to have successfully withdrawn all diamonds from the Low Countries prior to the German invasion and occupation. This in turn has had a marked effect, we presume, on German industrial output, for without industrial diamonds various manufacturing plants must have been slowed down and this at a most critical time. So serious has the shortage of industrial diamonds and melee become that there is an unconfirmed rumor that the German government has called on the people to surrender all diamonds so that they may be cut up for industrial purposes. If that is the truth, and there is no way in which that can be confirmed, as the censorship is so strict, it could only be of temporary help to German manufacturing plants. England is, of course, exercising every care to keep new supplies from reaching Germany.

According to statistics, American industry has ready access to a sufficiency of industrial diamonds, so our national defense program will carry on its preparedness campaign without any slowing up of the wheels of industry.

The world's diamond cutting and polishing industry has changed its location from Europe to our own New York City and some five hundred skilled workers are now employed in this comparatively new American industry. Our diamond cutters and polishers have the advantage over their European confreres as with better tools and equipment, plus the combined knowledge of all that has been accomplished before, they have already cut and polished gem stones that are acknowledged to be superior to those done by Old Country methods.

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LUFKIN SNAPSHOTS



Lario's Steve Redfern, of Wichita, Kansas, getting ready to "Feed the Sea Gulls," fishing off Galveston



H. S. Clarke, Tulsa, and Tucker Duncan, Cayuga, of Harper & Turner Oil Co.



Magnolia's Ray Kilchenstein, Local Superintendent, Tinsley, Miss.



Stanolind's C. D. Kerr pulls in a shark



Left to right: John Raymond Harris, Warehouseman; George Womack, Switcher; B. D. Pickens, Field Superintendent; O. W. Farmer, Switcher. All of Fred M. Allison Production Company, Cayuga Field, Texas



Stanolind's George White and Lufkin's Charles Dyer



"MAN AT WORK"—Lufkin's Great Bend office man, Linville Caraway



Left to right: Terry dog in car, Bill Turner, Production Supt.; J. W. Walthour, I.T.I.O. Co., Frederick, Oklahoma



Left: J. C. B. Van Den Berg, Equipment Engineer of the De Bataafsche Petroleum Maatschappij (B.P.M.) Shell Bldg., Houston. Right, Lufkin's Art Bennett

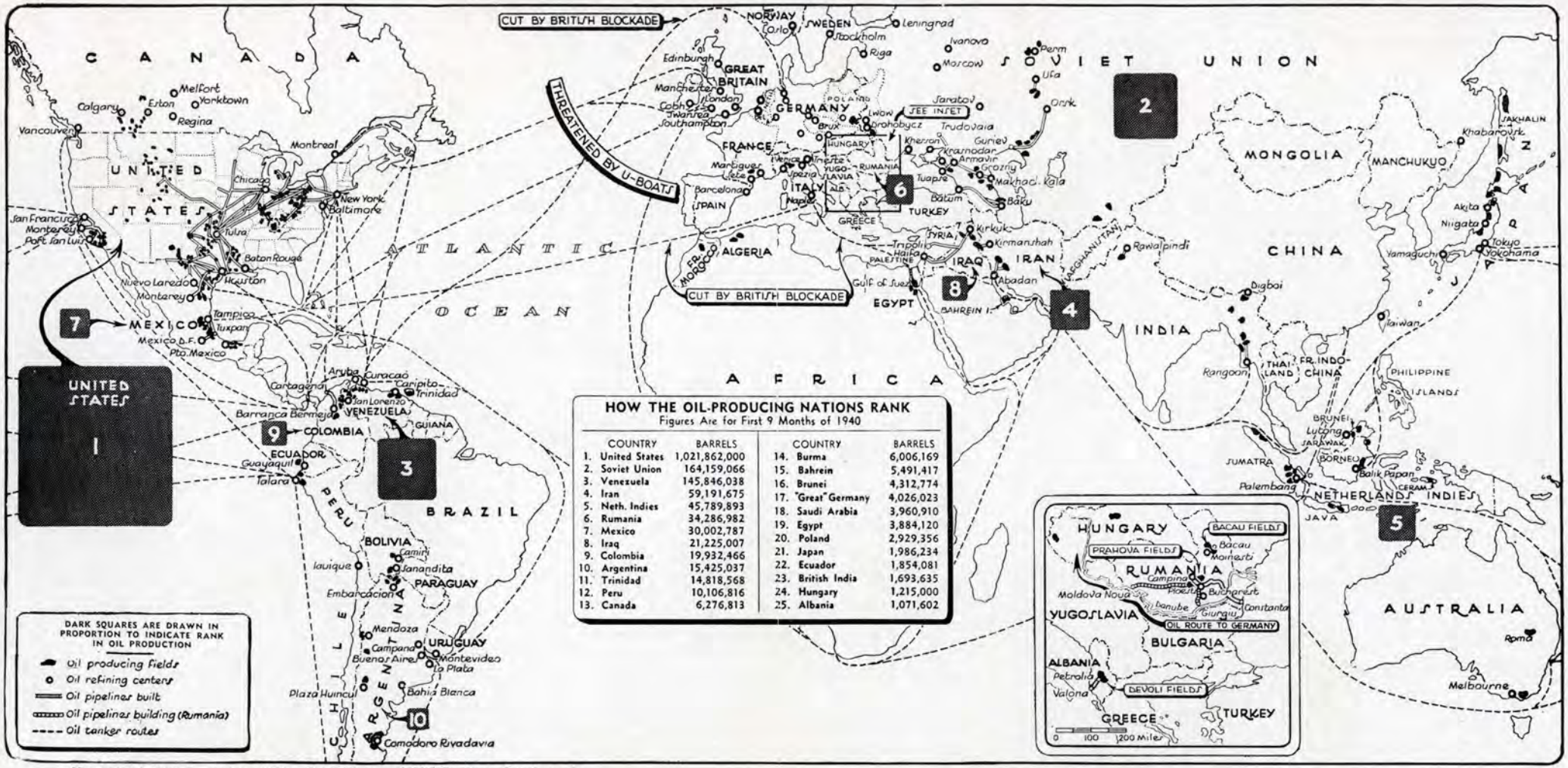


Left to right: Hardy Cordell, Gen. Supt.; Bob Davis, Construction Supt.; S. M. Mohon, Production Supt.; C. A. Blackford, Chief Clerk; Jack Napton, Warehouseman. All of Hassie Hunt Company, Tinsley Field, Mississippi



Phillips' P. M. Waddill, General American's J. B. Thompson and Pat O'Neal

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Map printed through courtesy of New York Times and Mid-Continent Petroleum Co.

Oil Plays Vital Role in War . . .

Much of the world situation turns on oil. The new power forces now arising in Europe and the Far East will never be able to build the vast empires of which they dream without acquiring those strategic oil areas. If they should succeed in getting them, their dreams would have much greater possibility of coming true.

The Near Eastern countries of Egypt, Iraq and Iran and the Persian Gulf fields had a total production, before the present conflict, of roughly 370,000 barrels daily and a potential much in excess of that. Altogether there are nineteen known fields. In addition there are nine refineries in this area with a daily combined capacity of more than 400,000 barrels. The most important refinery, at Abadan, Iran, has a capacity of 280,000 barrels per day, while at the Haifa terminus of the pipe line from Iraq the refining capacity is 40,000 barrels.

Rumania, now under Nazi tutelage, has halted petroleum shipments to Turkey. It is relatively easy to turn over part of Iraq's output to Turkey, but a more difficult transportation problem is faced in supplying Greece.

Both because of the growth of the Soviet industrial and military machine and the fact that the Soviet oil industry is now falling considerably behind the scheduled plan, Russia has little petroleum to spare. Her oil exports have ceased except to such countries as Germany and Sweden, with whom she has trade contracts.

In the Far East, Germany's Axis partner, Japan, produces less than 10 per cent of her ever-growing oil requirements.

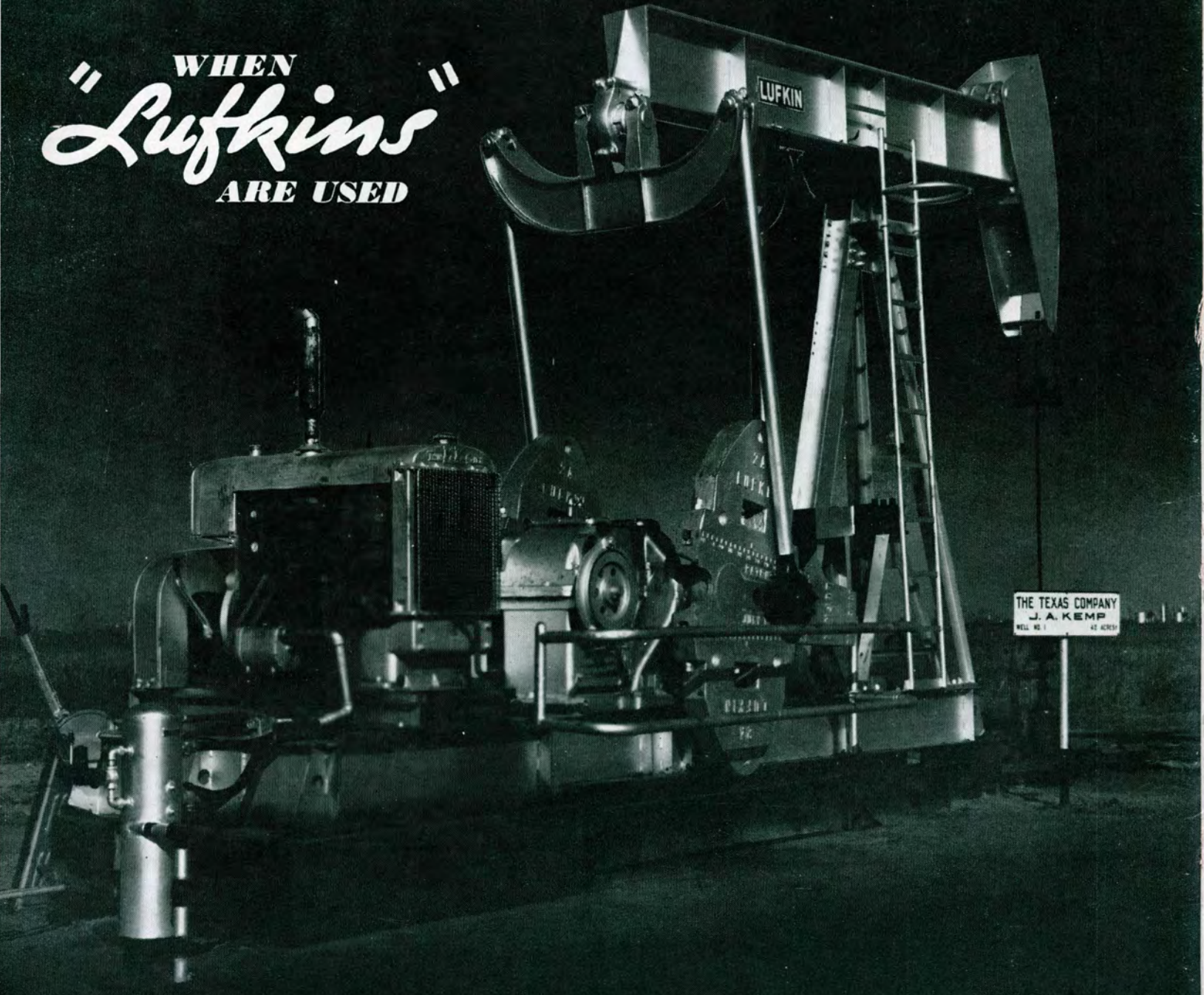
The only sources in the Far East, are in the Netherlands Indies, which exported 48,300,000 barrels during 1939. In contrast to this, according to rough estimates, stand Japan's requirements of 25,000,000 barrels for civilian needs alone. The distance from Yokohama to Palembang, Sumatran terminal and refining port on the eastern coast of Borneo, is 2,700 miles, while the distance from Yokohama to San Francisco is 4,536 miles. The reason for Japan's interest in this area is therefore obvious. Oil is important to war industry!

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No Blackout

FOR THE OIL INDUSTRY

"WHEN "Lufkins" ARE USED



LUFKIN PUMPING UNITS

LUFKIN UNITS are manufactured in Lufkin, Texas, by the Lufkin Foundry & Machine Company. Branches in principal oil centers