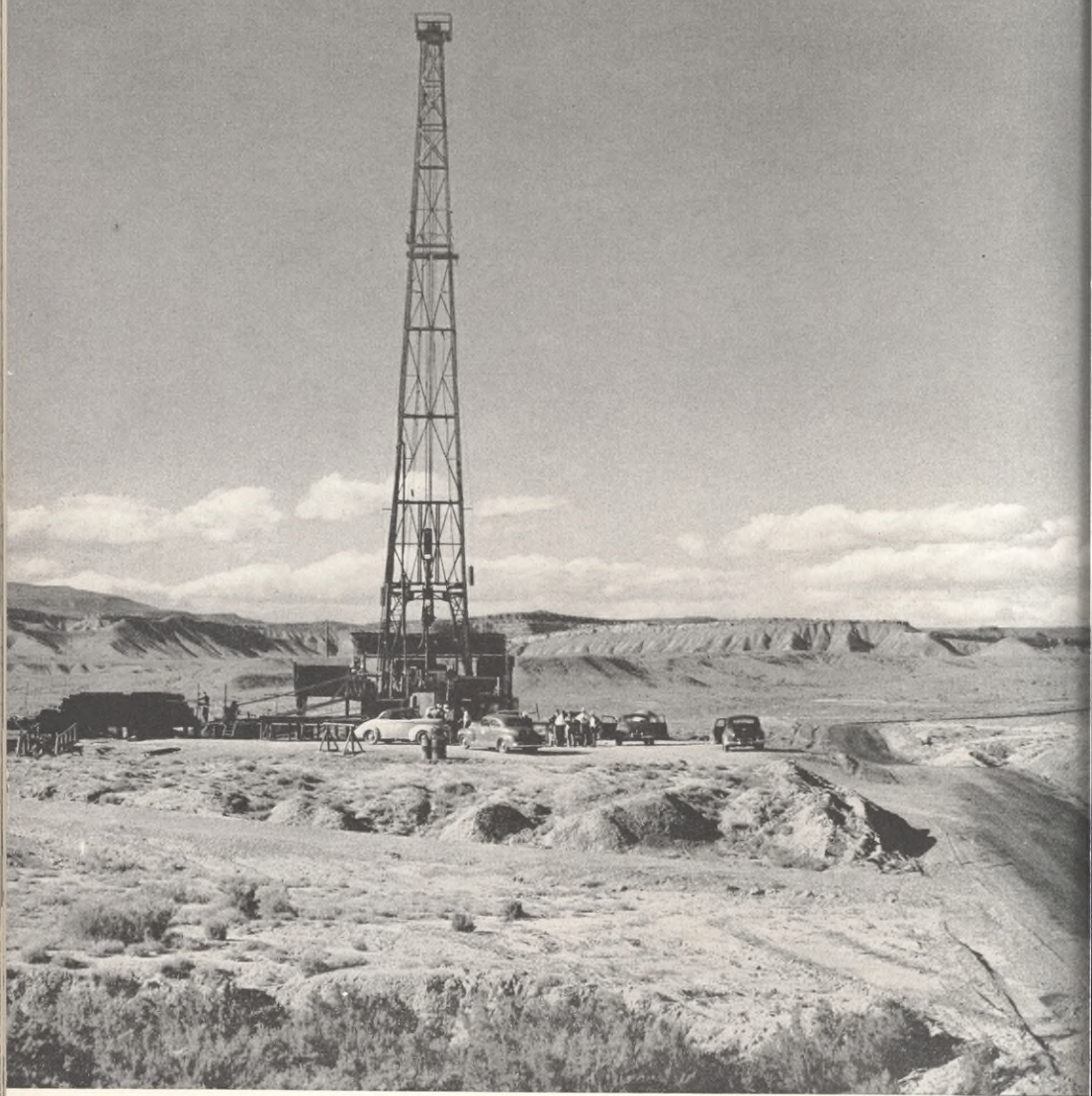




THE TEXACO STAR

FALL

1946



JACKKNIFE—Texaco's UP 14-20 location at Rangely Field, Colorado, is being drilled with a portable drilling rig, one of the industry's latest producing refinements. Rangely Field is dotted with these "jackknife" or collapsible derricks, which can be hauled in by truck, erected, and taken down in two sections for later use

THE TEXACO STAR

FALL, 1946

VOLUME XXXIII

NUMBER 3

Rangely	3
Oil Field in the Clouds	6
Star Close-Ups—"Manhattan Transfer"	10
Oil Men Weigh War Supply Experiences; Cummings Heads Group Studying Changes	15
Going Places Again	16
No Laughing Matter	19
Geological Whodunit	22
Cold-Starting Fuel Developed by Texaco	24
Company Program Promotes High Safety Standards	24
Texaco Is Awarded Navy Oil Contract	24

The front cover photograph, which was taken by Robert I. Nesmith, shows a part of the newly-developed producing field at Wilson Creek, Colorado. Majestically the derrick stands watch over a section of the "Little Burma Road" from a vantage point of more than 8,000 feet above sea level

A PUBLICATION OF THE TEXAS COMPANY

W. S. S. RODGERS, Chairman of the Board of Directors; HARRY T. KLEIN, President; M. HALPERN, J. S. LEACH, R. OGARRIO, C. E. OLMSTED, R. L. SAUNDERS, JAMES TANHAM, and TORREY H. WEBB, Vice Presidents; W. G. EUICKER, Secretary; L. H. LINDEMAN, Treasurer; OSCAR J. DORWIN, General Counsel; ERNEST C. BREEDING, Comptroller, 135 East 42nd Street, New York 17, New York

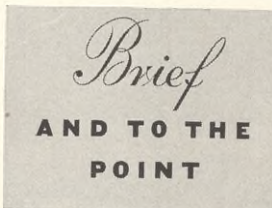
MEMBER, THE HOUSE MAGAZINE INSTITUTE,
INTERNATIONAL COUNCIL OF INDUSTRIAL EDITORS

COPYRIGHT 1946, BY THE TEXAS COMPANY

DIRECT ALL COMMUNICATIONS TO THE EDITOR OF THE TEXACO STAR
135 EAST 42ND STREET, NEW YORK 17, NEW YORK

OTHER PUBLICATIONS MAY REPRINT ARTICLES OR ILLUSTRATIONS NOT INDIVIDUALLY OWNED OR COPYRIGHTED PROVIDED THE EDITOR'S PERMISSION IS OBTAINED AND DUE CREDIT IS GIVEN TO THE TEXACO STAR

★ Employees of The Texas Company and its subsidiary and affiliated companies who have been granted military leaves of absence to serve in the armed forces of the United States numbered 6,235 as of mid-September. Of these, 4,936 have returned to Company service. One hundred and forty-five men have given their lives for their country.



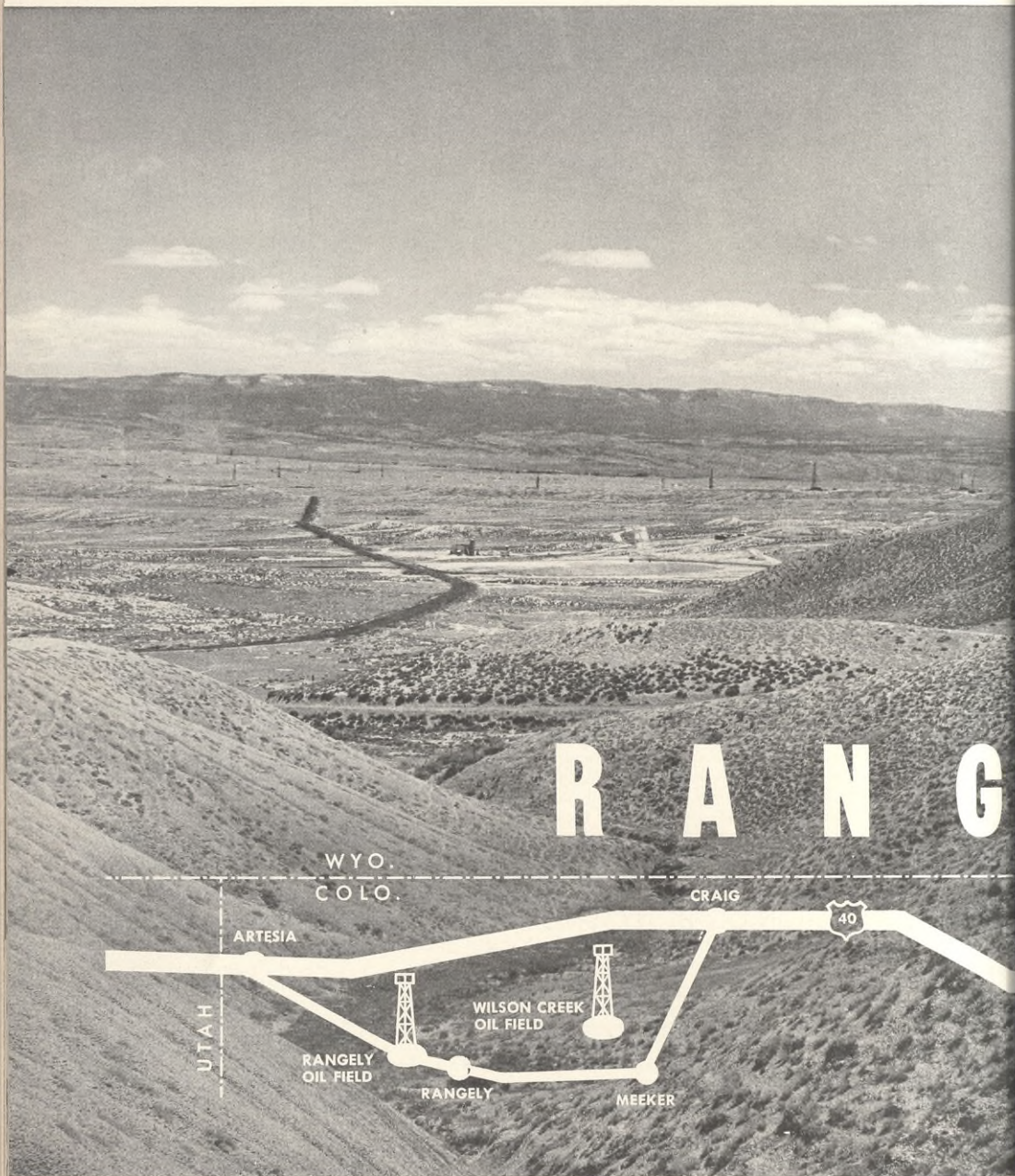
★ Denver will be pressing Tulsa for leadership as America's oil capital within another 10 years, predicts *Oil Reporter*, a Denver publication. Stories in this issue of THE TEXACO STAR on the Rangely and Wilson Creek oil fields indicate a basis for this prophecy.

★ It takes more than 10,000 separate "charges" of gasoline each minute to run a modern eight-cylinder automobile at 50 miles an hour. To deliver full power, each charge must ignite and burn in 1/300 of a second or less.

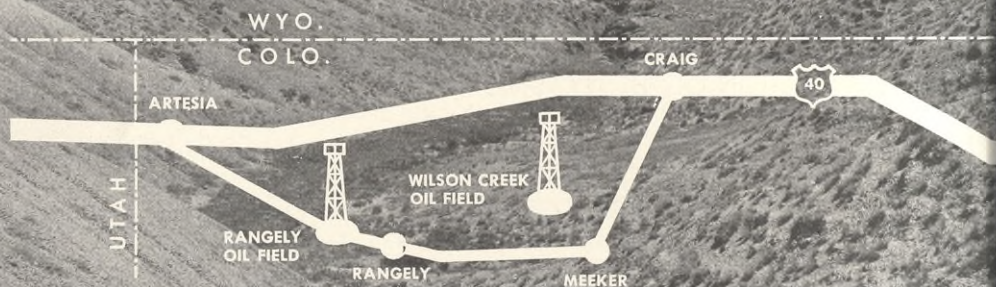
★ Maybe seeing isn't believing after all. A new chemical coating developed by an optical manufacturer when applied to ordinary plate glass produces these results: the glass remains transparent and at the same time can be used as a mirror. Treated glass will reflect heat rays and increase the efficiency of camera lenses.

★ A new use has been found for paper in oil producing. Impregnated and laminated paper tubing is being used in seismicographic exploration for crude oil deposits. The tube, manufactured by one company in 10-foot lengths, withstands 200 pounds hydrostatic pressure.

★ The oil industry spends more than \$15,000,000 a year on refinery research alone. This figure will grow rapidly as post-war research plans and construction are carried forward.

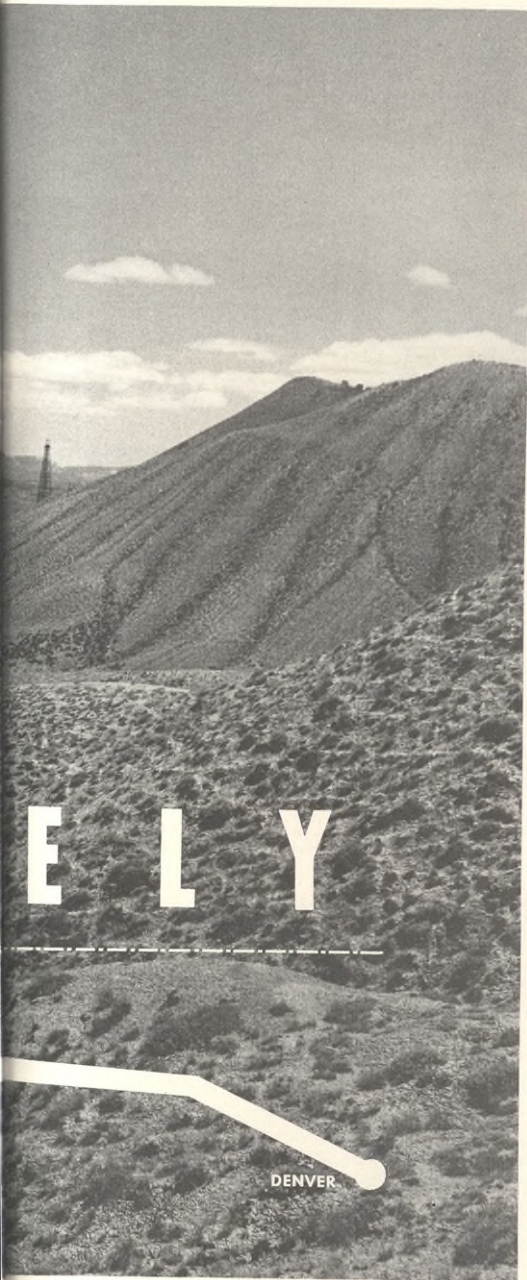


RANG



Looking across the Rangely basin from the "rim." The black-topped road in left center is the entrance to the field

from the northwest. Derricks in the distance seem to be tiny markers stuck into arid sands dotted with sagebrush.



IT'S THE COUNTRY'S FASTEST-GROWING PETROLEUM FIELD

STAND on the rim rock surrounding the Rangely basin, as in the picture on the left, and view this fabulous, new-yet-old oil field across its two-and-one-half-mile width.

It looks like the barrenest, most worthless land imaginable, but from beneath it now comes in quantity the fluid that speeds the western traveler, in his battered 1933 sedan or his prideful 1946 convertible coupé, on his way across the country. Even the sagebrush is stunted in the Rangely portion of the Uinta basin, in the neighborhood where once the half-breed Joseph Robideaux helped outfit covered wagon trains heading farther west.

"The mineral wealth of the West is but little known," said a writer in *Harper's New Monthly Magazine* in 1867, only eight years after petroleum production was born in Pennsylvania. "... The enthusiast in his wildest flights has never yet dreamed of the reality."

The writer was speaking of the mineral wealth of yellow gold that had been discovered less than a decade before in the Colorado mountains some 300 miles eastward. In his own wildest flights he did not dream that beneath the sagebrush in the far northwestern corner of the state existed more than 250,000,000 barrels of black gold that some day men would want almost as much as they wanted the yellow metal.

For centuries this vast pool of oil drowsed beneath the surface. After 1902 it produced a million and a half barrels from shallow wells, but it was not the kind of oil that was marketable in quantity. A major company, after drilling for two years and making the first deep discovery in the Weber sand, did not regard the incident as worthy of further development at that time.

When war came, that deep discovery at Rangely was remembered, and oil men flocked in, sought leases, and drilled with better equipment than had been available a decade before. They could reach the Weber sand in about 100 days, on the average, with this new equipment. The cost of drilling was still high and tools had to be trucked into this bleak area 125 miles from the end of the railroad at Craig, but the venture paid. There was a market for the oil. War was being waged, and the need for petroleum was desperate.

No one talks of Rangely as a "boom." The petroleum industry is unwilling to sponsor a boom, or any

Superimposed map shows locations of Rangely and Wilson Creek oil fields. Story on Wilson Creek begins on Page 6

parallel of the Colorado gold rush that began in 1858, when men "without any exercise of their brains, madly and foolishly rushed into mining speculations." Any company that sinks a drill at Rangely knows just about how deep it will find the Dakota sandstone, the Sundance sand, or the Weber formation. There have been few dry holes. The greatest risk is in drilling a well on a lease so near the edge of the pool as to miss it entirely.

Drilling goes on wherever possible in the center of alternate 40-acre tracts, thus giving 80-acre spacing. This is wise development policy. Later, when the nature of the field and its economics are understood, closer drilling may be attempted.

The potentialities of Rangely have been revised upward month by month, as the major company geologists search the subsurface with the multiplicity of instruments science has given them. In the first six months of this year alone, they increased the estimate of Rangely reserves 91,430,000 barrels above previous figures, bringing the gross ultimate reserves up to 264,400,000 barrels.

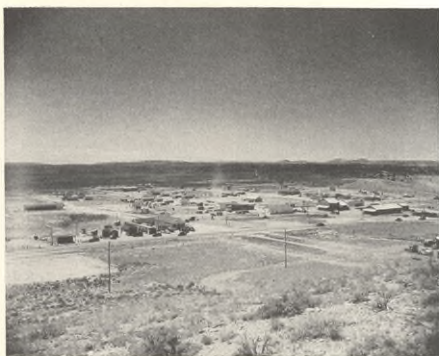
On its own leases and on the land it operates for the Union Pacific Railroad in the Rangely basin, The Texas Company has 110 present and potential locations for wells. It controls a very substantial portion of the field's ultimate reserves.

As production has mounted during recent months, pipe line capacity has been crowded to the limit to transport the oil. The Texas Company's production goes to the Texaco refinery at Casper, Wyoming, where it can be efficiently handled.

Although the exemplary production methods at Rangely are far from creating a "boom," the same cannot be said for the only two towns near by—Artesia, and the village of Rangely. Their growth, however, is kept from actually booming by shortage of building materials. In these towns the oil workers and those who supply them with the necessities of life live in tents, trailers, log cabins, and old street cars.

Conditions are better on the field itself. At The Texas Company's camp, for instance, the cottages are neat, well-painted, and comfortable. They haven't lawns yet, but these are coming. The office and warehouse is attractive and cool in spite of the broiling sun outside. The roads on The Texas Company's leased property are better than average, hard-surfaced and smooth in comparison with the heavily-traveled roads outside the field.

The Rangely oil field, now the fastest-growing in the United States if not the most spectacular, will be producing petroleum for many years to come, thanks to the careful methods being employed in its development.



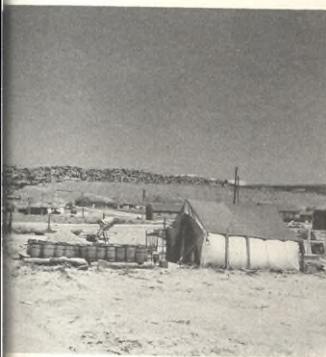
Artesia, the two-year-old outpost village for Rangely Field, gets heavy traffic and dust



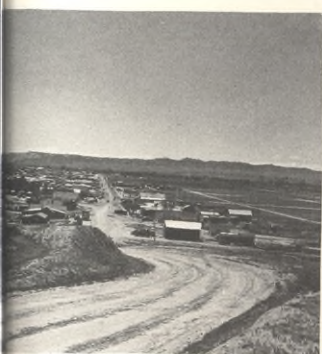
Clark's Texaco Station in Rangely is typical of newly-established business in this growing town



Texaco warehouse at Rangely Field is model of efficiency, with supplies neat and in strict order



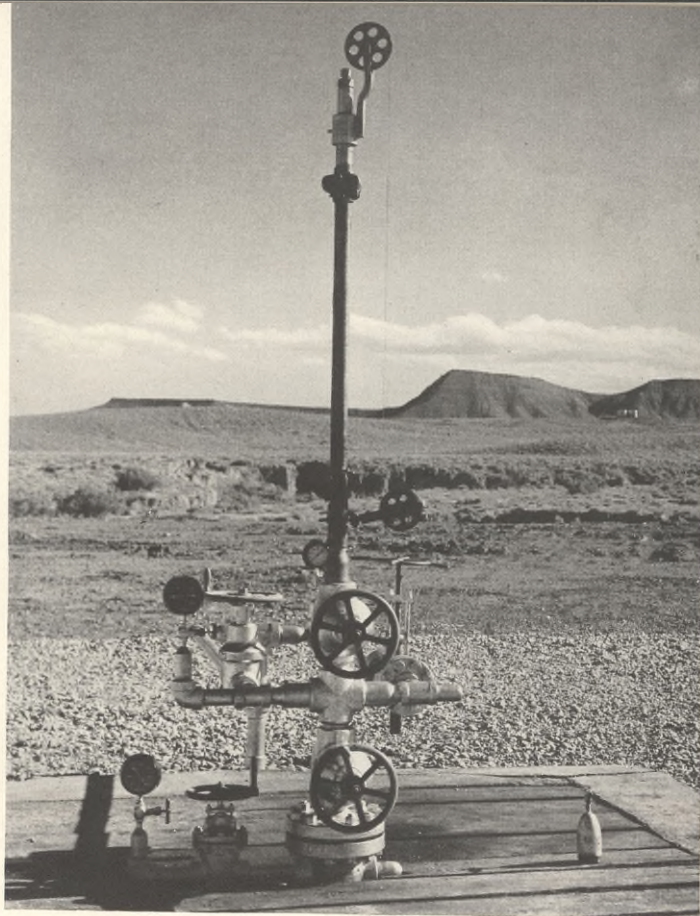
Tent is home and office for Artesia lumber dealer. The kegs hold nails



Rangely's main street. Two years ago very few persons lived here




Drilling contractor's pipe yard outside Rangely office is also orderly



Texaco's earliest well at Rangely undergoes periodic check of bottom-hole pressure. This device determines the economical rate of flow about every 30 days



Company camp at Rangely, with pipe yard, office, and storage buildings in foreground. Employees' cottages are in rear. The whole will be landscaped



OIL FIELD IN THE CLOUDS

Unit No. 10 at Wilson Creek, 8,378 feet above sea level, is the highest well in the highest oil field in the United States. An air landing strip adjoins it

THE clouds come very close to Wilson Creek. This rugged oil field in the Colorado Rockies is the highest producing area in the United States. Its highest well, No. 10, is 8,378 feet above sea level. THE TEXACO STAR has illustrated oil wells on Texas plains as flat as a billiard table, and wells far offshore in the Gulf of Mexico, but those at Wilson Creek are in a class apart. They literally hang on the sides of mountains, and access to them has been provided by major feats of road engineering.

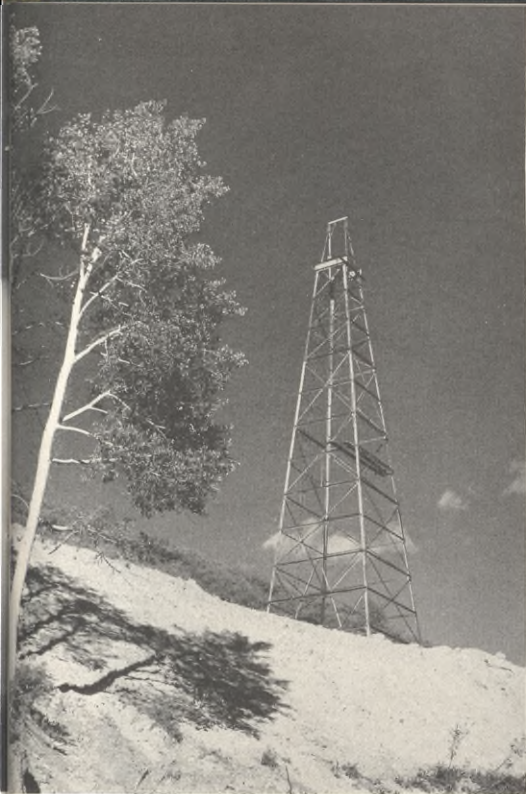
Conditions at Wilson Creek are far different than at Rangely, only about 50 miles away. Here the oil man does his prospecting much more on the vertical than on the horizontal. The same care is taken, though, to prolong the efficient life of each well by spacing it far enough from others so it has enough room. There are 16,000 acres under lease at Wilson Creek, and so far the number of wells has just passed 30, with 28 producers, most of them flowing wells.

Attempts were made many years ago to find oil in the Wilson Creek neighborhood, but without avail until 1938, when the discovery well was drilled. Wilson Creek soon afterward became the largest field

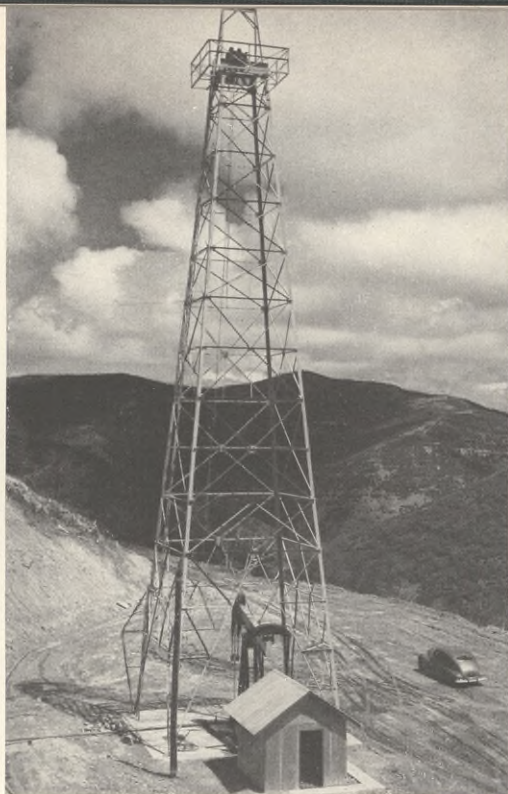
in Colorado, but has since passed that honor to Rangely.

It is difficult to judge whether the outstanding feature of Wilson Creek is its wells, its roads, or its natural scenic beauty. Striking off across country on a dirt road that climbs steadily, one wonders how oil men found Wilson Creek in the first place. It isn't near anything in particular. Some distance away is Texaco's Moffat Pool at Hamilton, with nine wells. Hamilton is little more than a combination country store, Texaco service station, and post office run by J. Albert Ottens, which serves both Moffat and Wilson Creek as a mailing address. Iles, Loyd, and Axial are other places on the map. Texaco has a minority interest in an oil pool at Iles. At Axial the dirt road leads off through the ranches and sheep pastures to Wilson Creek. A few houses are the only man-made structures to be seen for miles until a canyon finally closes in and a few derricks can be spied looking like pins stuck on the giant pin cushions of towering peaks.

Scarcely visible at this distance are the beginnings of 35 to 40 miles of roads carved out of the moun-



Some quaking aspens made room for Wilson Creek wells. This one still stands near Unit No. 18



Like most Wilson Creek wells, No. 23 was drilled on an earthen shelf carved from the mountainside

tain sides and winding around peaks and over ridges. Not only the roads, but many well locations and the rights-of-way for gathering lines, were graded out where a single false move would have spun both bulldozer and operator a thousand feet down a rock-sprinkled slope. To date, no such false moves have been made, and roads are still being extended to new locations in the process of drilling wells to outline the structure.

Drilling is done by contractors, as is the general custom throughout The Texas Company's Rocky Mountain Division of the Producing Department, and not by the Company's own drilling rigs and crews. The usual depth of wells is between 6,000 and 7,000 feet down to the Morrison and Sundance sands. It is estimated that these two sands hold about 42,000,000 barrels of crude oil at Wilson Creek. The field produces a high-quality, paraffin-base crude currently averaging about 7,000 barrels daily in the Summer and somewhat less in the Winter because of weather conditions.

In this high altitude, Winter sets in early, and the paraffin in the crude hampers the flow of oil from

wells and through gathering lines. Also, it is not unusual for Wilson Creek to experience a 15-inch snowfall in mid-May. Thus, it is a major task for many months to keep the roads open so the wells can be serviced.

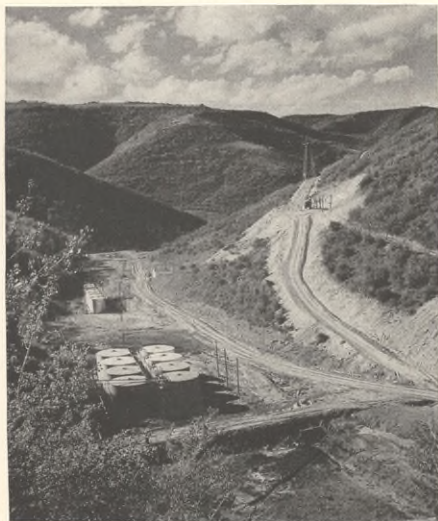
Wilson Creek production is owned jointly by The Texas Company and The California Company, a producing subsidiary of the Standard Oil Company of California. All of the production is on the public domain, or land belonging to the Federal Government.

Most of Wilson Creek's production flows by gravity from the wells into gathering tanks, and then from the main tank batteries, still by gravity, through the field's own pipe line to Iles. There The California Company's share of the production is taken by one common carrier line. Another takes The Texas Company's portion, boosts it over an incline by means of a pumping station, and starts it on its way, again by gravity, to the Texaco refinery at Craig. Craig is about 2,000 feet nearer sea level than Wilson Creek.

Probably no oil field in the country has greater natural beauty than this one, and much care has been taken to retain its scenic quality. Some observ-



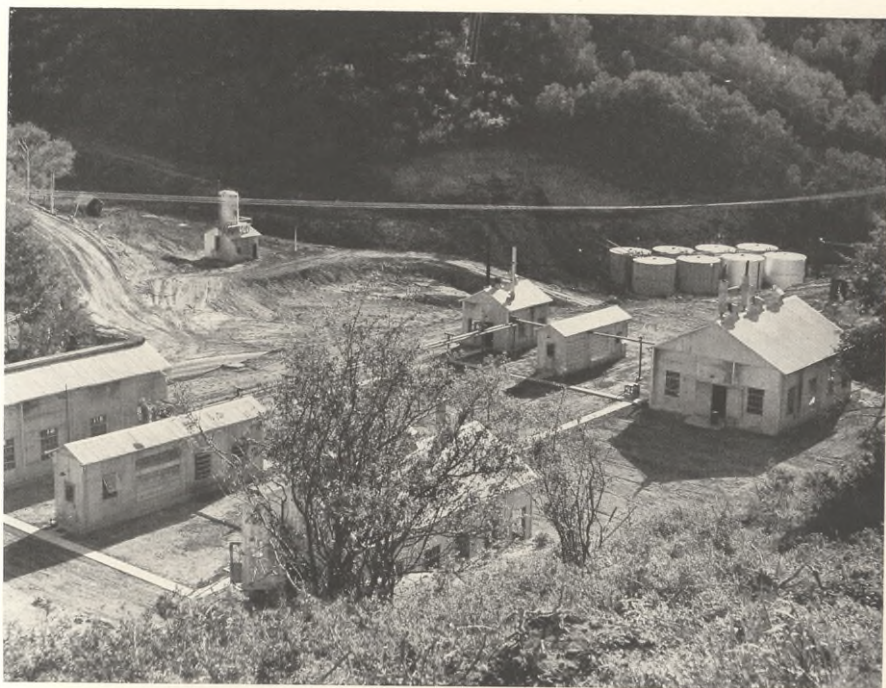
The camp at Wilson Creek from one of the roads above the entrance. Office and storage buildings are in the foreground and two rows of cottages farther back



Main tank batteries and separators. Crude from each of the two formations goes in its own tanks

ers call it the cleanest oil field they have ever seen. Few things, they say, are easier to dirty up by carelessness than a producing oil field. At Wilson Creek there are no signs of seepages, no old and unsightly pipe scattered about, no rusting motorized equipment, no discarded lumber. The only element of disorder shows along some of the roads, where quaking aspens have necessarily been torn out by the roots and tumbled over the edge in roadbuilding. These will soon decay, and the scars left on the mountain sides by the blades of bulldozers will eventually be healed by vegetation.

There are about two dozen employees at Wilson Creek, and they, with their families, are a community in themselves. They live there, Winter and Summer, in attractive rows of cottages almost hidden in the dead-end canyon above the office and entrance to the field. One building, similar in appearance to the cottages, is the school. The county furnishes and pays a resident teacher during the school year. The school room is the neighborhood meeting place, particularly during the long Winters. The nearest sizeable town is Meeker, about 19 miles away by road, and Wilson Creek families do their shopping there or at



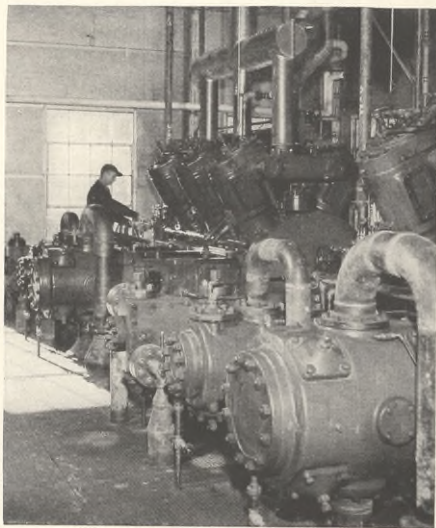
Wilson Creek's repressuring and electrical generating plant. The repressuring method maintains the gas pressure that enables flowing wells to keep flowing

Craig, some 40 miles away. On rarer occasions the family car may take them to Denver.

Life is anything but drab at Wilson Creek, in spite of certain drawbacks. Those who live there are on the roof of the country. They have comfortable homes, lawns, gardens, congenial neighbors with the same interests, and neighbors' children to play with their children at drilling make-believe oil wells. Certainly nothing crowds them. From the top of the "Little Burma Road"—as the highway system down one side of a ridge is called because of its resemblance to the famous wartime route over the Himalayas—the horizon begins 100 miles away.

Wilson Creek is by no means isolated, for in this part of the country distance means little. Road-clearing is an essential part of the oil business here, and even in the dead of Winter, if access roads were blocked, the air field alongside No. 10 would be swept free of snow by the wind, or could be plowed free, and small planes could land in an emergency.

The oft-repeated truism that "oil is where you find it" is especially applicable to Wilson Creek. Many a person has thought that here it was certainly found in an excellent place.



Interior of one building of the repressuring and generating plant. These are compressor units

MANHATTAN TRANSFER



If you were to spend a few days aboard one of Texaco's tugboats that shuttle petroleum products around New York Harbor, Long Island Sound, and the Hudson River, you would encounter a variety of experiences and scenery.

For part of one day—it may be dawn, dusk, or midday, depending on the tide—your tug will be assisting in docking or undocking a Texaco tanker at Bayonne Terminal. On another occasion you may tow a bargeload of oil to New Haven, Connecticut, and make the all-night return trip in a buffeting gale. Another day you may go far up the Hudson.

Tugs are assigned to their varied tasks by regular telephone circuits or ship-to-shore telephone at the elbow of a dispatcher in Texaco's Marine Department in the Chanin Building. Texaco petroleum products come to New York chiefly by tanker. Tugs and barges are the means of transferring them to distribution points in many surrounding areas.

Suppose you are sticking pretty close to Manhattan one day, aboard the tug *All American*. Early in the morning you bring *Texaco Barge 326* with a load of gasoline from Bayonne Terminal over to the Clinton Street Bulk Plant in Brooklyn. While you're waiting for the barge to be pumped out, Captain Arthur Johnson, who stood a tough trick at the wheel for most of the night before, turns out of his bunk, has breakfast, and pays off some of the crew. There are

13 men in the *All American's* crew. Captain Johnson is an old Hudson River boat pilot.

You're scheduled to go up the Hudson to load a barge with gasoline from a Texaco tanker, the *South Mountain*, which is anchored off Yonkers. Another tug, the *Latin American*, will leave Bayonne with an empty barge and you'll meet her up there.

In early afternoon you leave Clinton Street. *Barge 326*, now empty, is lashed alongside and First Mate Pat Kelly is in the wheelhouse. The "juke box," or radio telephone, is tuned low, and you hear the voices of dispatchers sending other tugs about their business in New York Harbor.

When you are below Manhattan, with the Statue of Liberty off the port bow, a brisk wind whips up little whitecaps and fine spray is blown over the barge's bow as it breasts each one.

Opposite midtown Manhattan, Kelly turns the barge in midstream so the rope fenders, which the deckhands on the barge have been lowering over its side, and the loading lines, which are being flanged up, will be in convenient position when you pull up to the *South Mountain*. An empty barge, in a stiff breeze and a running tide, is not easy to swing around. Always "keeping a line on her," Kelly makes the tug circle the barge as the barge turns. You've covered some of the width of the Hudson—or the North River, as it's called here—before you're on your way upriver again.

As you pass under the George Washington Bridge, you hear the "juke box" say: "Calling tug *All American*! Calling tug *All American*!" Kelly tunes up the volume, lifts the receiver, and gets his orders. The

(Continued on the Center Spread)



The barge breasts the whitecaps off Manhattan



The *All American* half circles the turning barge



Tugs are the sturdy little partners in Texaco's Marine Department that transfer petroleum cargoes by barge between terminals and waterfront bulk plants, or between tankers and terminals. They also assist in docking and undocking the fleet's big tankers

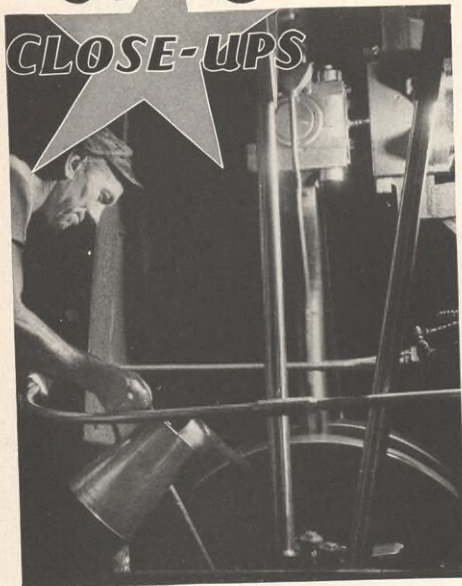


Deckhands make barge "fast" to the All American



Barge and tug ready to come alongside tanker

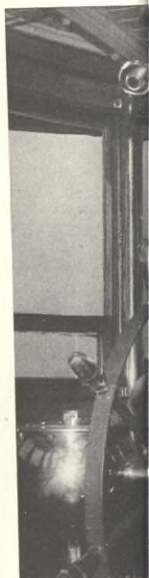
STAR CLOSE-UPS



Oiler M. Blanco's task is aptly described by his title



Deckhands like Sigurd Larsen have to know their lines



First Mate E

MANHATTAN TRANSFER

(Continued from Page 10)

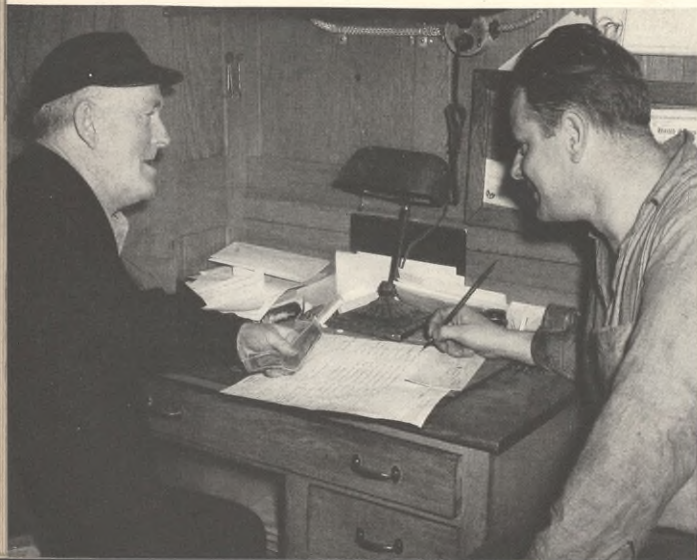
Latin American, it seems, is already tied to the *South Mountain*. Kelly is to call the *Latin American* and make final arrangements for his own arrival alongside the tanker, which is now in plain sight.

A bell clangs from the galley, and some of the crew go below to eat the hearty fare needed by men who work in the outdoors

and on salt water. The barge deckhands finish barge loading lines and ready their hawsers to the tanker and hook up the pumps. When sh by two bargeloads of gasoline, the *South Mo* continue up the Hudson's ship channel, and s will proceed to their destined terminals.

Many days full of incidents like this keep and industrial wheels turning in the environ

Lew Raymond signs for his pay in Captain Johnson's presence

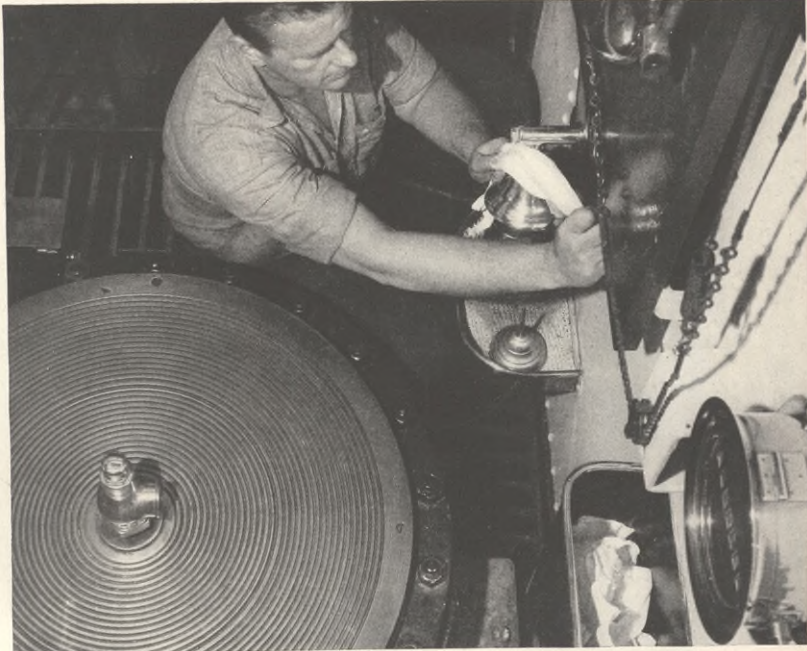


Wholesome chow is prepared in the





K. Scovill, Jr., uses the radio phone



their work with the
you make fast to
has been lightened
it will be able to
and the two barges

man, commercial,
New York City.

by Cook Joe Cosmo



First Asst. Engineer Lew Raymond (top) polishes engine room signal gong. In the engine room, Fireman Peter Pientko adjusts a burner. The exterior of a tug gives little hint of its interior roominess, which is designed so that all members of the crew can work and live in comfort



STAR CLOSE-UPS



Texaco tanker *Montana* about to leave Bayonne

In close quarters, maneuverability is what counts. Big vessels need help to dock and undock, and the powerful little tugs assist in getting tankers out into midstream



The *Montana* requires assistance from the *All American* and two other tugs. Above, the *All American* is doing her part. At left, the *Montana* is away from the dock and control of her is in the pilot's hands



Riding high, the *Montana* heads downstream, on her way out to the Atlantic and back to Port Arthur

Oil Men Weigh War Supply Experiences; Cummings Heads Group Studying Changes

FOREWARNED is not forearmed. Prophecy of conflict is little comfort when war arrives. Oil men who entered the armed services in World War II take a rueful view of what happened to us during that uphill struggle. They are determined that we shall not again be caught unarmcd.

We had prophets aplenty before this war—forewarnings were a dime a dozen but they couldn't overcome wishful thinking and inertia. Carl E. Cummings, Superintendent, Beacon Laboratory, is determined that the lessons learned in the recent war must be applied in our military system immediately.

With other oil men across the nation he is organizing the talents and skills that directed the procurement and distribution of petroleum during the war. Plans based on hard-won experience will be made to assure a better system of supply of petroleum products in the event of another war.

After World War I, a great many civilian experts in all fields returned to their industrial tasks with a feeling that "something ought to be done about it." The vagueness of that attitude indicated the eventual indifference which arose toward assisting in revision of military supply methods.

It is to forestall that indifference before it grows that oil men are organizing immediately. Several hundred of them recently attended a seminar held in Washington by the Army-Navy Petroleum Board. Plans were made to set up regional committees for the purpose of conducting a survey of observations and opinions.

Cummings was selected to be chairman of the general committee in charge of the survey. The first problem is to contact every man who was assigned in any of the armed forces to the Petrol, Oil, and Lubricants (POL) services. Cummings proposes as complete a survey as possible. It will be the basis of initial recommendations to the A-NPB. That board will then submit pertinent recommendations to the Joint Chiefs of Staff.

Cummings has already asked 11 former POL men to serve as temporary regional chairmen.

Already the Fuels and Lubricants Branch of the Quartermaster Corps has plans under way which have the flair of Jules Verne about them—planes laying flexible glass pipe lines, and the like.

The plans of Cummings and his fellow ex-POL experts show a grave concern, not with forewarnings, but with the facts of a fighting war.



Carl E. Cummings

Carl E. Cummings was named Superintendent of the Beacon Laboratory, Beacon, New York, late in August, 1945, the day after he was released from military service. He first entered the service of The Texas Company in June, 1923.

Before joining Texaco, Cummings attended Northwestern University and was graduated from Johns Hopkins University with a degree in mechanical engineering. Before his graduation he had worked for the Army's Corps of Engineers on engine testing at the Baltimore Polytechnic Institute. When he finished his studies he held a second lieutenant's commission in the Officers Reserve Corps.

Cummings was named Chief Engineer of the Company's Bayonne Laboratory, Bayonne, New Jersey, in 1929. In 1931 he was assigned to engineering work in connection with the construction of Beacon Laboratory. Later he became Engineer in charge of the Engineering Research Department. When he was granted his military leave of absence in 1941 he was Supervisor of the department.

Cummings was called to active military duty with the rank of captain and returned to inactive duty with the rank of colonel. His last major assignment with the Army was chief petroleum officer in charge of the Area Petroleum Office, London.



"Just take US 104 west out of the city," Texaco Dealer Cliff Smith of Rochester, N. Y., cheerfully directs touring motorist. Travelers have thronged roads in record numbers

GOING PLACES AGAIN

FROM one end of the land to the other, Americans have been re-discovering their country by motor car. Through long Summer days, and days bright with the pageant colors of Autumn, American motorists have wandered the nation's highways in swift search of scenes they knew before the war.

They have found the American soil—warmed by the peacetime sun, green with growing things, and shaded and cool along winding rivers—good to look upon. And, they have found the land alive and stirring with fellow motorists headed for the places of great beauty the country holds to the traveler's view.

Some of those who have returned to the open road are men wearing remnants of uniforms that saw service in Normandy, Guam, Iwo Jima, or Cassino. They, more than the others, rejoice to find the land they fought for so unchanged—fairer than any where duty took them.

Perhaps its highways show some wear and tear

after years when most of its young men were away, and certain details had to be neglected. Perhaps it is a little shabby in spots, and some of its neat, white cottages are dingy gray for want of paint. Those are just surface defects, and they will be remedied.

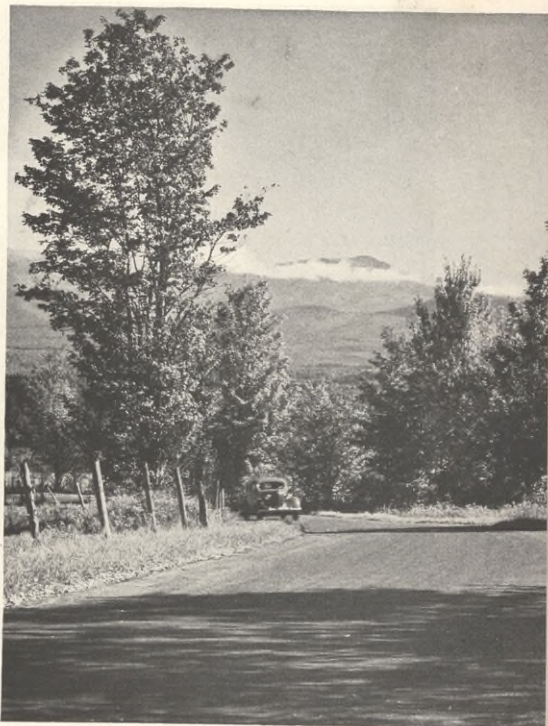
The spirit of America is still there. The people are a little troubled, as might be expected after a great war, but there is still the will to work, to produce, and to enjoy the fruits of toil.

The 1946 vacation season found more people on the highways seeing more of America than they ever saw during any previous year. Most of them made their old cars do, and they bought far more gasoline and oil than they ever bought before.

Not many of them took long trips with the idea that "the old bus won't last many more miles—let's have our last fling, because there's no telling when we'll get another." Nearly every motorist behind a steering wheel was confident that new cars, plenty



Motorists re-discovering America find things unchanged; Texaco's banjo sign is a familiar sight along the highway



Mount Washington, N. H., tops the Presidential Range, a lovely route for scenery-seeking automobile travelers

of tires, and everything else he was promised in the post-war world was just around the corner—somewhere.

Whatever was "just around the corner" wasn't always on the corner where the nation's familiar landmark—a service station—stood. The service station man didn't have enough new tires, so he patiently patched many an old and dusty tire of the tourist. He pumped gasoline into the vacationist's gasoline tank and poured oil into his crankcase.

It wasn't quite like the old days, though. Like a fighter a little groggy from body blows, the man at the service station has been struggling to get back to pre-war service. He wasn't always in complete uniform, so he didn't look quite so attractive as in yesterday—but uniforms have been hard to get. His station exterior, too, sometimes suffered from lack of paint, so it didn't always glisten and sparkle as it once did when more men were on duty and fewer cars were on the road.

Sometimes the service station man missed wiping



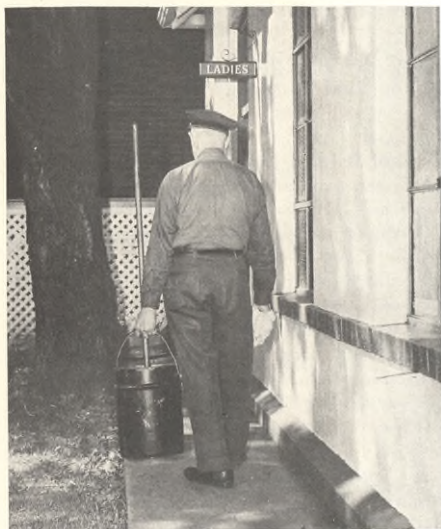
Many trailers joined the vacation traffic; some were held up on back roads by lazy sheep who just don't care to rush



Texaco dealers like Bob Mitchell of Buffalo have helped make touring by auto a pleasure. Against many odds they have swung back to the extra courtesies of pre-war Texaco service

a windshield, blaming and excusing himself at the same time with the observation that it just wasn't possible to put all the little refinements into his job and still take care of everybody. He sometimes had to skip checking the tires because four cars stood in line waiting for gasoline. Usually, though, he smiled and said "thank you," even when tourists were impatient, as tourists generally are when they finally pause after pounding along the road for hours at a stretch.

Let no car owner think that the service station man is unmindful of his own recent shortcomings. He sees most of them himself, and is reminded of others from time to time. Right now there is room for improvement at service stations and in the courtesies rendered there. Motorists are entitled to these courtesies, and they shall have them. As 1946 rolls into 1947 and another vacation season, and as more cars and more tires roll out of the factories, there will be a noticeable change. For the man at the service station knows, too, that he must also produce everything his customers have been waiting for—courteous and prompt service, clean surroundings, good products, and a cheerful invitation to return.



The clean rest room is a symbol of American standards; cleanliness demands constant attention by busy dealers

No Laughing Matter



Today, everybody is clamoring for a new car. It was different, half a century ago, when the automobile industry was born

THE automotive industry is enjoying an ironic last laugh this Fall.

Half a century ago, the pioneer motor car builders ran head-on into public scorn. No one in his right mind wanted one of *those things*.

At this moment a lot of people who like to think they're in their right mind would give a right arm for one of *those things*. Of course, sales rooms would look a little messy cluttered up with right arms, so dealers are cautiously turning down any such offers.

The industry's last laugh has backfired—with demand at its greatest, production is crawling. Motor car makers, harassed on all sides, can't even work up a gentle sneer. They're too busy sweeping up parts bins.

Maybe some of the old-timers wish from time to time they could retire to a nice quiet harness shop.

However, they can look back across the past 50 years with pride and humor.

The "contraption" they nursed through years of public abuse and thousands of unpredictable backfirings has grown into a \$4,000,000,000 industry. This is the Golden Jubilee year of the giant enterprise.

Along about the time that Grover Cleveland was wrapping up his second term as President, a few derring-do fellows were preparing to lead America out of the mud. They'd decided, heaven forbid, to build motor cars as a business.

For a few years, however, it looked as though that hardy breed of button-shoe sports known as "automobilists" would be forever mired in backroads mud. Most people were content to leave them there.

The public mind, moving with the agility of a



"WHOA, NELLIE!"—Many a nag developed a bad case of nerves



STUCK AGAIN—Mud could be counted on to hamper the wheels of progress



"GET A HORSE!"—But the horse was doomed

tired elephant, was dead set against horseless carriages. Like most prophets, the pioneer motor car builders met with more abuse than honor in their own land.

France, enjoying any kind of a laugh, threw open her network of carriage roads to home-grown experimenters and assigned the name "automobile" to gas buggies. America was far more begrudging to her cavaliers of the open road. A western newspaper, campaigning to keep autos off public roads by means of law, solemnly announced:

"It is a dead moral certainty that that infernal machine will frighten horses and endanger the lives of men, women, and children." (And editors, too, no doubt.)

The horse, with modest unconcern, suddenly became a public hero. Not since the fall of Troy, when a wooden (and reasonable) facsimile thereof held the day, had Dobbin loomed with such importance. "Get a horse!" became a rallying cry.

In truth, many a nag developed a bad case of nerves after an encounter with the furious explosions of early-day motor cars.

But, the pioneers persisted. Most operated on a shoestring—others weren't so lucky. They succeeded in generating a lot of bad publicity and a few lively controversies.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

RESISTLESS

"The somewhat worn-out charge that the motor car is essentially a fair-weather vehicle is nowise more effectively controverted than by the widely varying conditions under which automobiles are regularly and successfully used.

"Neither tropical rains nor Arctic snows, mud or ice, or sand or sleet, can stay the triumphal progress of the resistless latter-day chariot which everywhere is outspeeding and outworking the horse."—From an article in *MoToR*, February, 1904.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

A classy new gasoline buggy, delivered complete with whipstock holder, looked like it might have been designed by the American Friends of Fresh Air. The boys and girls were a long time getting in out of the rain while the early builders confined their coachwork to runabouts, torpedo landaulets, and touring cars.

A fast ride was like a journey through the Cave of the Winds. Caps, hoods, leather gauntlets, dusters, and goggles gave father and mother a rather awe-

some appearance. Motoring was definitely an effort and an event.

Enterprising suppliers came up with some tricky items like a super raincoat which covered three people at once with a head hole for each. A touring car with six people confined in a mountain of raincape must have looked like a motorized sack race.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

TRANSFORMATION

"The passing years bring many strange changes, revulsions of sentiment, readjustments of values. The enemies of yesterday are the friends of today, the morals of the past are the immoralities of the present, the household utensils of antiquity become the artistic heritage of the modern world, but in no phase of human life has there been wrought a stranger transformation than is even now taking place in the economic position of the horse."

From an article in MoToR, June, 1913.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Later, the automobile enjoyed a moment of dramatic glory. Movie makers rolled out endless footage in which the motorcar figured in last-minute escapes. As long as Honest Jack's car was in good running order, American womanhood was secure from the vile clutch of early day meanies. Virtue sometimes hung by the slender thread of correct spark timing.

Before the automobile got out of its swaddling clothes, women drivers were the center of some ungentlemanly remarks. However, it took a woman really to lay the lash on her gadabout sisters in an article in a 1913 issue of *MoToR* entitled "When Woman Drives Man Jumps." The woman critic probably got the frost from lady drivers in the smart set.

Touring, in the days when you got your gasoline from the neighborhood blacksmith, was an undertaking in which there was no room for the timid. A cross-country jaunt was a perilous adventure into the unknown. You took along a complete extra set of tires and tubes (happy day), tire-chains, several jacks, tow chains, wood blocks, a few lengths of planking, a shovel, an axe, and a good supply of fuel and oil. A large amount of faith completed the necessary equipment.

The automobile eventually gave the farmer a chance to find out if all those wild "goings on" in the city were true. They were.



HOLD TIGHT—Motoring was definitely an effort and an event



BE PREPARED—A cross-country jaunt was a perilous adventure into the unknown



NEW HORIZONS—"Land sakes, Maw, look at what we've been missin'!"

Geological Whodunit

Exactly what caused the sudden disappearance of Texaco's Fee No. 4603 at Sour Lake is still a mystery that stirs shop talk

SOMEWHERE beneath the geographic hide of Hardin County, Texas, lies the answer to a 17-year-old riddle—an awesome mystery which will long mark the lore of producing men in the famous Sour Lake oil field.

In October, 1929, a large plot of land owned in part by The Texas Company disappeared! Without any visible warning a 15-acre area was sucked down into the earth as though by a giant undertow. Within 72 hours the eerie freak of nature created a cavity which stunned onlookers who rushed to save drilling equipment and pipe lines.

Today, an accidental "dead sea" with no surface outlets covers the sunken land which is known as the Sour Lake subsidence. Its murky waters hide a lively riddle which still generates a lot of shop-talk guesswork.

The momentary "eighth wonder" swallowed up a strip of land known as The Texas Company's Fee No. 4603, Brooks Subdivision. It extended to other properties as well.

What happened?

No one, including geologists who later studied the strata and terrain, has determined the exact cause of the collapse, or shifting, of sub-surface structures which allowed part of the field to subside into a lake.

The Sour Lake "sink" was by no means the first or only freakish prank of its kind, as subsidences have occurred in other oil fields and sulphur deposits before and since. Probably none was more disturbing than the drop in Hardin County in 1929.

On October 7 an ordinary incident gave the only warning that a strange thing was about to occur. Two oil producing wells in the field began to pump water.

Next morning members of the "bull gang" on a Texaco well noticed something amiss. A spot which was within 100 feet of a well "wasn't where it used to be." The ground had settled slightly—and still was being pulled down by some invisible force.

The movement was described as so gradual that it was hardly noticeable, at first. An area 100 by 150

feet—a good-sized city lot—gave way slowly, as if yielding to the clutches of some creeping underground monster.

The crew frantically moved the derrick and equipment away. Oil men, watching the sinking action relentlessly threaten the field, were apprehensive.

Water rapidly filled the depression, and that same day trees and all vegetation on the spot began vanishing. By nightfall medium-sized trees had disappeared—still standing upright! The crater widened steadily. More water drained into it from a near-by creek. A ditch reversed its course. Those watching seemed entranced by an air of weird finality about the whole scene.

Adding to the alarm of witnesses was the fact that large cracks appeared at the edge of the sink and fissures led away from the immediate danger area, some pointing toward the vulnerable tank farm.

No. 1 H. M. Terry well, completed a few days before with a daily flow of 250 barrels, started flowing salt water and next day quit altogether.

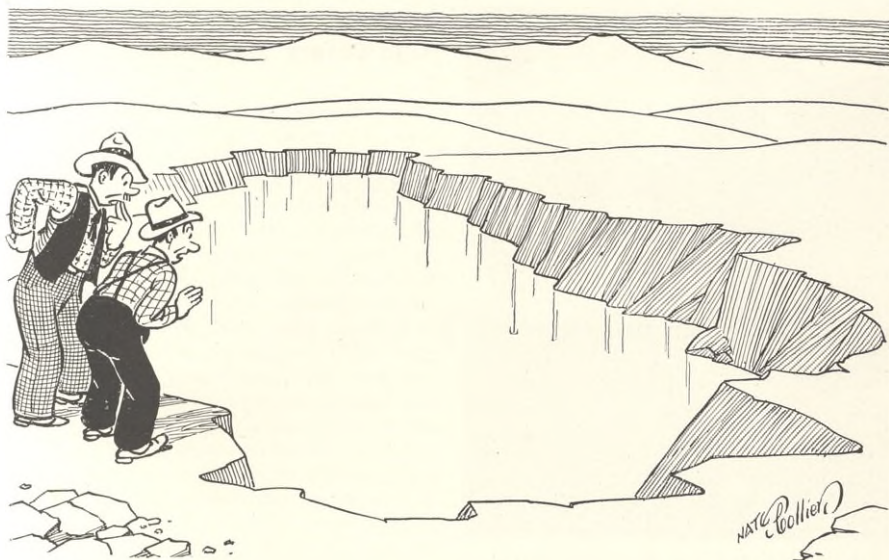
More than 35 wells belonging to four companies salted up and failed. On the other hand, the Gilbert 39, west of the sink, making eight to 10 barrels a day, spurted to 250. But it was the only one. All the wells which went to salt water were from 700 to 1,500 feet deep. Some had been producing for 25 years.

By the third day the sink had attained a depth of from 100 to 160 feet, according to the best measurements and estimates at the time. It had covered its present area of almost 15 acres. The subsidence was complete. It had started at the center of the Fee strip, which was about 30 feet in width and 1,200 feet in length, and wiped it out.

The four oil properties affected by the movement of the earth were the Texas, the Minor, the Gilbert, and the H. M. Terry.

All four companies reported many derricks thrown out of line. Most of them had to be rebuilt or braced before being put back in use.

Tubing in all wells in a radius of from 100 to 1,500 feet, it was recalled, was either broken or bent at a



"What became of our oil field?"

depth of between 450 and 525 feet, indicating the level of the earth's shifting or other disturbance.

A stir of excitement swept the community. Great interest was aroused among geologists, and the sink was front-page news for several days.

Production was never restored in the affected wells. The Texas Company pumped one well as a test for two years but brought up nothing but salt water.

Crews ripped up and moved pipe lines in the menaced zone. A new boiler belonging to Dr. F. D. Hart tilted over the edge of the big hole. A crew with tackle rushed up and saved it. A 200-barrel tank tipped but did not go in.

Among the possible causes of the underground mishap speculated on were the following:

The sinking was the changing of cap rock formations and oil sands.

Heavy blasting in that section to locate a dome shortly prior to the subsidence caused it.

Water in the cap rock dissolved the salts of the dome.

The dome had an "incompetent arch" which existed long before the local exploration for oil.

A cavity was created by the removal of solids, chiefly salt, in connection with oil production.

A cavity resulted from the removal of 73,000,000 barrels of oil from the pool in the quarter-century of the field's history.

Among the scientific studies made of the unusual Sour Lake case was that of Dr. E. H. Sellards, who

at the time was director of the bureau of economic geology, University of Texas.

Dr. Sellards found that the tubing in The Texas Company's well No. 150 and in the Terry Oil Company's well No. 1 was bent at a depth of 520 feet. Each was a little more than 400 feet from the center of the sink.

"The injury to the tubing resulted from the movement of earth, presumably toward the sink," he stated in a paper presented at a meeting of the American Institute of Mining Engineers. He concluded:

"The cause of the sink will perhaps remain in some degree a matter of speculation. That such sinks may form through natural causes is obvious, Sour Lake near the crest of this dome being apparently a sink formed previous to the occupation of this region by white men. On the other hand, in view of the very large amounts of solids, chiefly salt, removed in connection with oil production, it seems highly probable that the immediate cause of sink formation was the removal of solids in this way.

"The most probable explanation appears to be that a cavity developed in the salt body which continued enlarging until a thin, porous, and probably cavernous cap rock collapsed, permitting subsidence of the overlying sediments."

The crater lake is useless except for drainage of the surrounding terrain. A catch-basin without an outlet, it is a dead sea born of an accident. And it rests on top of a geological riddle.



This unit, removed from within the nacelle for demonstration purposes, carries a Texaco developed cold-starting fuel which slashes starting time in sub-zero temperatures

Cold-Starting Fuel Developed by Texaco

TEXACO research has developed a new cold-starting fuel which reduces the time required to start aircraft in sub-zero temperatures to two minutes. It formerly took as long as six hours to get a plane into the air in extremely low temperatures.

The new fuel has undergone elaborate winterization tests in Alaska in United States Army Air Forces aircraft. The AAF ordered a large quantity of the special fuel for experiments after early tests had proved it successful.

Cold starting has long troubled the aviation industry. Aircraft gasolines will not start an engine in sub-zero weather. The special Texaco fuel is designed to replace the high-octane aviation fuels during the starting interval.

Commercial and military aircraft formerly had to use expensive pre-heating equipment. Leading aircraft engine manufacturers shipped the latest military engines to The Texas Company's Beacon, New York, Laboratory to further the development of the new fuel.

A portable external bottle or tank containing the cold-starting fuel is attached to regular fuel lines for the starting period. It is then removed.

This militarily valuable development will also prove valuable in peacetime transpolar flying.

Company Program Promotes High Safety Standards

SAFETY is a prime concern of The Texas Company, and a continuous program designed to promote the highest safety standards is carried on by the Personnel Department's Safety Division, Houston, Texas.

The program is exhaustive and aims to acquaint every employe with the most modern of accident prevention techniques. For example, during the current year, 5,368 safety meetings are being conducted. Departmentally, this breaks down as follows:

Producing Department, 1,480 meetings; Domestic Sales Departments, 1,616; Refining Department, 1,704. The Texas Pipe Line Company, the Texas-New Mexico Pipe Line Company, and the Kaw Pipe Line Company are also participating with 468, 64, and 36 safety meetings respectively.

Fourteen different types of visual and oral promotional materials are being used to stimulate interest in reducing accident frequency. Included in this varied group of materials are motion pictures, recordings, sound slide films, posters, safety publications, and first-aid manuals.

Safety records are scrupulously maintained and they serve to spur a lively competition for the dozen safety awards available to the program participants.

Top award is the President's Award, a trophy which is presented annually to the operating department with the best accident record for the preceding year.

Texaco Is Awarded Navy Oil Contract

"TESTED and approved," the hallmark of high quality products, is the designation once more given to Texaco-lubricants by the United States Navy. For the 11th successive year, The Texas Company has been awarded an important U. S. Navy Department contract. The contract runs from July 1, 1946, to June 30, 1947.

It calls for more than 10,000,000 gallons of oil and is one of the largest contracts to be awarded in peacetime. In announcing the award, R. L. Saunders, Texaco Vice President in charge of the Domestic Sales Departments, estimated that the contract would involve \$5,000,000 in purchases by the Navy.

The Photographs in This Issue

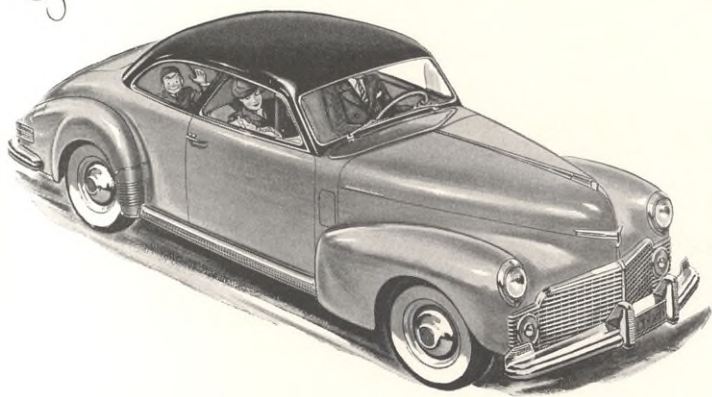
★ THE PHOTOGRAPHS in this issue of THE TEXACO STAR were taken by Robert I. Nesmith for The Texas Company, with the following exceptions: Page 11 (lower left), which is a STAR Staff Photo; page 15; page 17 (upper right), which is by Winston Pote from A. Devaney, Inc.; and page 24.

1896-1946

MERRILY WE'VE ROLLED ALONG



THE "contraption" that huffed and puffed over muddy roads at the turn of the century has blown itself into a \$4,000,000,000 industry. Once ridiculed, the automobile has achieved immense industrial stature. It has also achieved 50 years of life—a longevity which even enthusiasts could not have predicted half a century ago. For the few visionaries who weathered public scorn, the Golden Jubilee of the horseless carriage is a personal tribute. We salute the automotive industry as it passes the halfway mark to its centennial. It provided mass transportation for a nation and shaped the growth of America.





... get the superior **FIRE-POWER** of **FIRE-CHIEF** gasoline !

- ✓ **SMOOTHNESS** — Fire-Chief is both trigger-quick in starting, and smooth, velvety in road performance thanks to its *balanced* Fire-Power.
- ✓ **FULL POWER** — Your car "glides" uphill on Fire-Chief's accurately adjusted balance of power and smooth-action ingredients.
- ✓ **ECONOMY** — Full power is *economical* power. Fire-Chief's alert Fire-Power prevents gasoline waste.

TEXACO DEALERS

where you get...



SKY CHIEF
GASOLINE



FIRE-CHIEF
GASOLINE



HAVOLINE AND TEXACO
MOTOR OILS



MARFAK
LUBRICATION



TUNE IN... Texaco Star Theatre every Sunday night. See newspapers for time and stations.