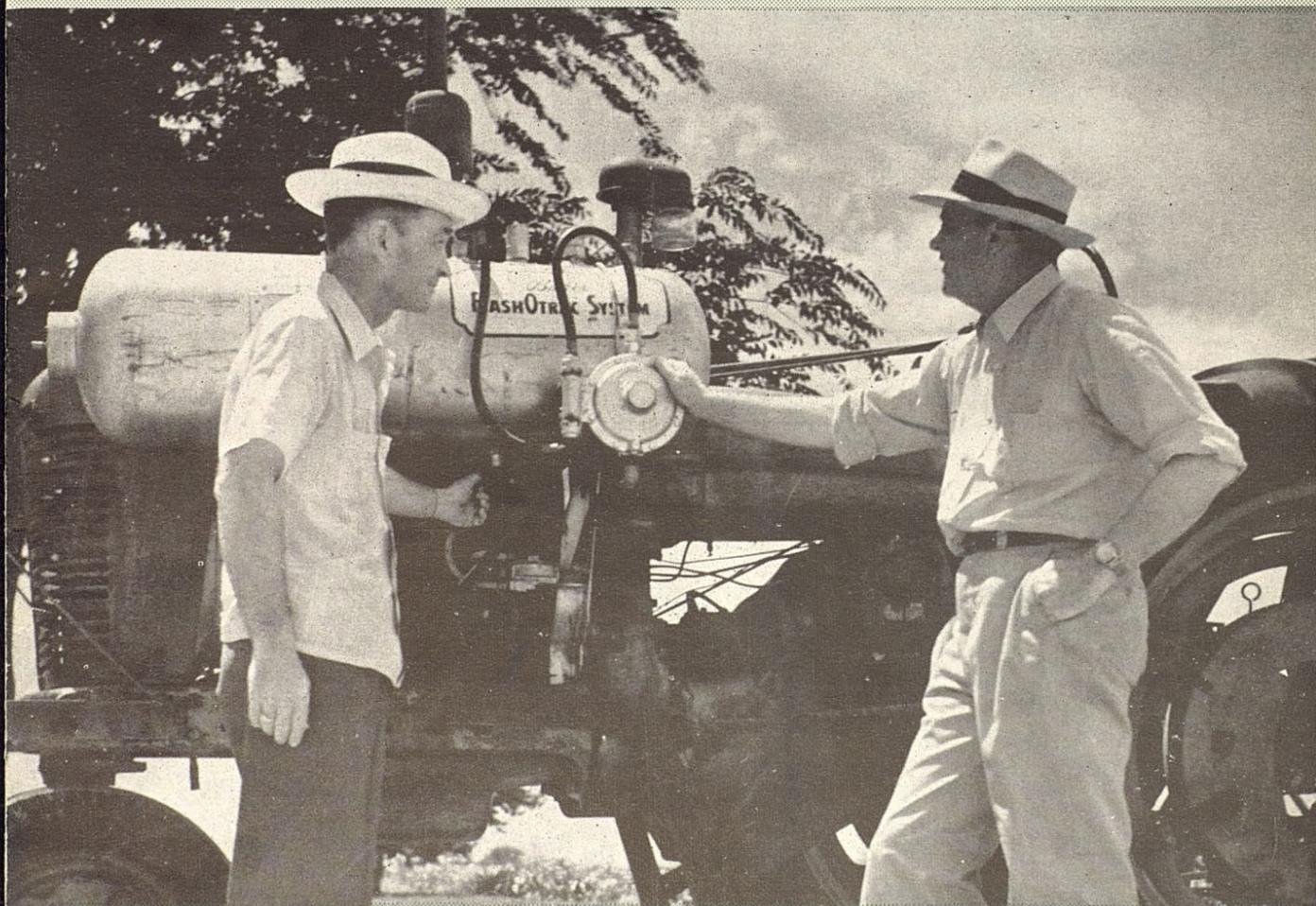


The
SHAMROCK

AUGUST - 1951



LP-Gas — Dependable Power

Story on Page 9

Littlefield, Texas

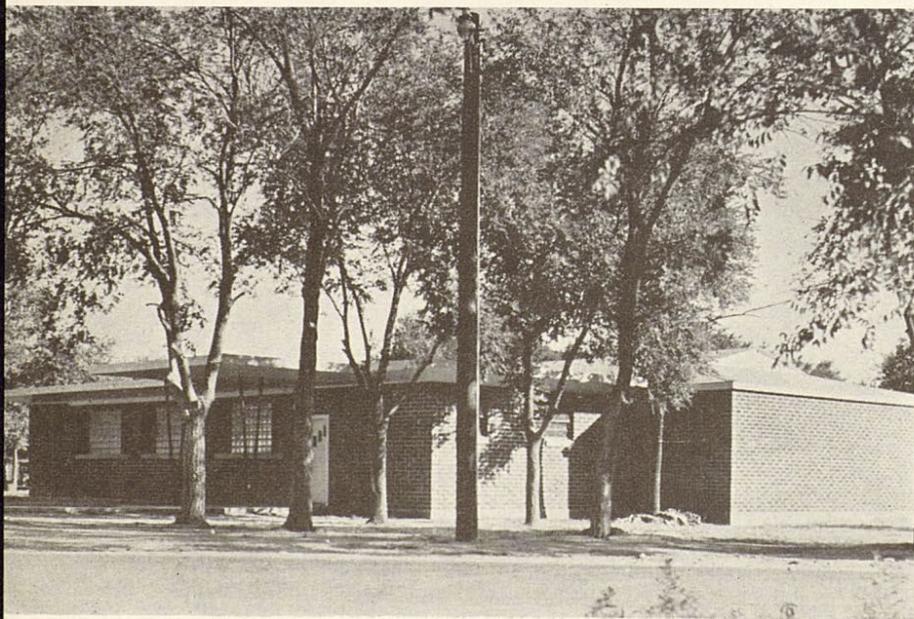
Busy Two-Way Market Place for a Prosperous Farming Community in the Rich South Plains Irrigation Region

Farmers in few other places have made better use of the advancements of science and research than in the Panhandle of Texas. And in the Texas Panhandle, no better example of modern, mechanized agriculture can be found than that practiced by progressive farmers of the region around Littlefield.

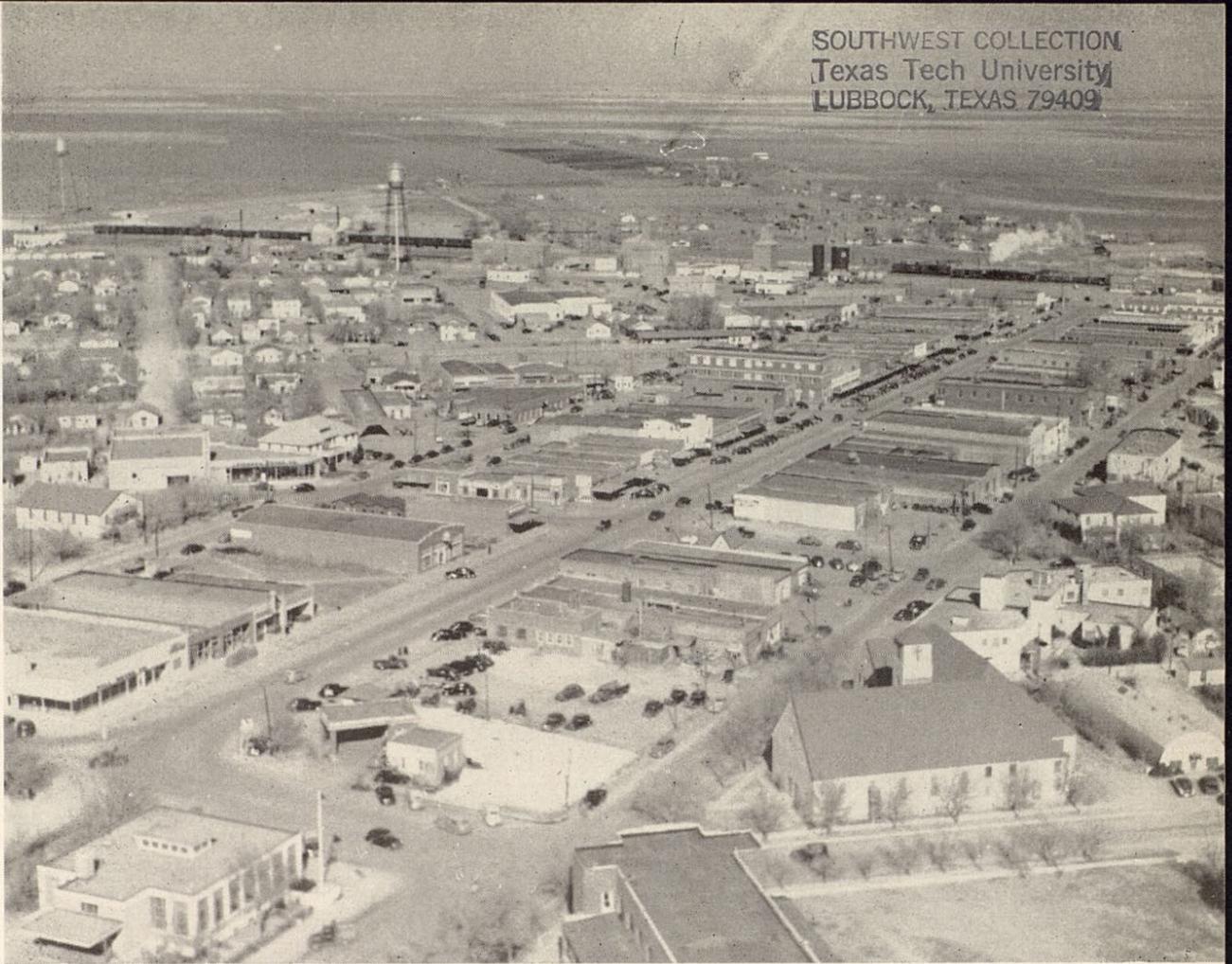
Not only must the farmers of America supply food and other farm products for the civilian and military needs of this nation, they must also help feed and clothe a large part of

the free world outside the boundaries of the United States. To perform this prodigious task, American farmers have developed a highly technical, mechanized type of agriculture that has substantially boosted farm production in the past few years. The bumper crops of cotton, grain sorghums, wheat and other products of the fertile fields in the Littlefield area are a tribute to the success of these modern scientific farming methods.

As the main trade center for this productive



This new \$15,000 building, housing a community youth center, is an example of the many worthwhile civic enterprises supported by Littlefield, Texas.



Aerial view of Littlefield business district

area, Littlefield, Texas, is a small but flourishing city of about 6,500 persons. County Seat of Lamb County, Littlefield boasts good transportation facilities, excellent schools, modern shops, a number of farm produce buying and processing firms, and many other progressive business and civic enterprises. With these and other advantages, the attractive little city is a busy two-way market place for a large and prosperous farming area.

Industrial enterprises in Littlefield as well as in other Lamb County towns are almost entirely related to farm production. They include cotton gins and compresses, cotton oil plants, packing plants, grain and feed mills and other activities engaged in processing locally produced farm crops. In addition to these, a number of grain elevators in the county provide farmers with easily accessible markets for their wheat, grain sorghums and similar crops.

Besides those engaged in processing or marketing farm produce, a large number of wholesale and retail distribution firms and attractive, modern shops provide all kinds of goods and services for farmers and other residents of Lamb County. One feature that impresses Littlefield visitors is the progressive appearance of the downtown shopping district. New business buildings and new store fronts throughout the city are indicative of the bustling business activity of the community.

Littlefield's aggressive Chamber of Commerce and other civic groups are doing an excellent job of promoting new business and industrial activity in the community. In attracting new commercial enterprises, civic leaders point out the transportation, power and other industrial advantages of the area. They also call attention to the value of farm crops both as raw material and as a source of income.



Littlefield supports two modern hospitals. Pictured above are the Littlefield Clinic, left, and the Payne-Shotwell Foundation, right.

Other bits of evidence attesting to the healthy growth of Littlefield and Lamb County include a new high school building, to be occupied this fall; a recently completed city park; a new \$15,000 youth center; and a great many new homes in every part of the County. Official census figures credit the city of Littlefield with a more-than-70-per-cent increase in population since 1940 and show an increase in county population of more than 13 per cent during the same period.

Transportation facilities serving the Littlefield area include U. S. Highway 84 and State

An annual festival in Littlefield is Chamber of Commerce sponsored chicken barbecue, held yearly in June or July.



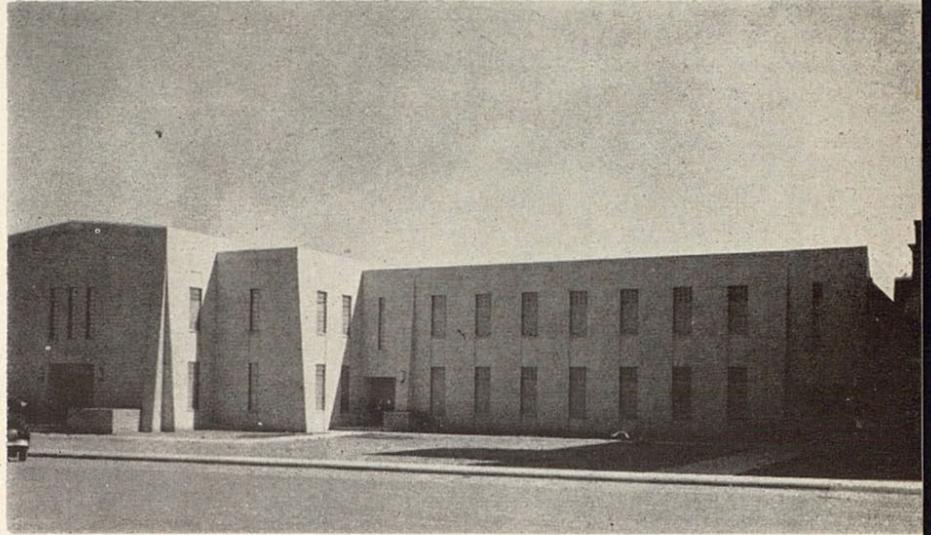
Highways 54 and 51. All three are good, all-weather highways. A network of well-maintained farm roads connect farms and ranches of the county with Littlefield and the other trading centers—Olton, Amherst, Sudan, Earth, and Spring Lake. Littlefield is also served by the Panhandle and Santa Fe Railway.

An asset which has been of prime importance to the development of the community has been the availability of inexpensive and abundant power. Not only has power been important in the growth of industrial activities, it has also made possible the mechanized farming methods that have played an important part in the high farm productivity of the region. Nearby oil and gas fields of the Panhandle provide the ultimate source for most of the power used in this region. Petroleum, in one form or another, is used to power farm machinery, irrigation pumps, the big engine-driven generators of electric power plants, trucks, automobiles, tractors, and all kinds of mobile equipment.

The development of irrigation activities in Lamb County during the past five or six years has been largely responsible for much of the community's recent progress. Of the 489,000 acres under cultivation in Lamb County, more than 200,000 acres are watered by approximately 1,650 irrigation wells. Most of these wells have been put into operation in the past five years, although some irrigation activity has been carried on in the county for many years.

Lamb County lies near the center of the South Plains irrigation district, one of the largest shallow water irrigation areas in the United States. Development of irrigation in this area

The attractive building at the right is the new educational building of the Littlefield Baptist Church, one of the many well-supported churches in the community.



has been stimulated in recent years by good prices for farm crops, together with a relatively inexpensive and easily accessible source of power in the nearby oil and gas fields.

The principal crops in Lamb County on both dry land farms and irrigated land are cotton, grain sorghums and wheat. On irrigated land, however, average production of these crops has been more than doubled. While these three crops still head the list in the county's farm production, other crops particularly alfalfa, are growing in importance in irrigated areas. Several experiments have been conducted in the county in production of potatoes, lettuce and other garden-type crops, but, because of the big current demand for grains, feed crops, and cotton, commercial production of these garden-

type crops is of comparatively minor significance. For the past four years, Lamb County has ranked fifth in the state in cotton production. About 200,000 acres in the county were planted to this crop last year. Average yield was one-fourth bale to the acre on dry land and just under a bale to the acre on irrigated land.

Lamb County consistently leads the state in grain sorghum production, although this crop ranks second in importance to cotton in the county. In 1947, Lamb County was the top-ranking grain sorghum producing county in the United States and is normally one of the top five or six counties in the nation in production of this crop. The usual grain sorghum acreage in Lamb County is about 190,000 acres. Average yield is approximately 1,400 pounds per acre on dry

The Littlefield Country Club is another community project which local citizens feel justly proud of.





This busy cotton gin is one of 34 in Lamb County. Cotton is normally the leading crop in the county.

land and 4,000 pounds per acre on irrigated land. Last year the grain sorghum crop brought an income to the county of more than \$3,000,000.

Third ranking crop in the county is wheat. Normally about 30,000 acres are planted to this crop with average yields of 12 bushels to the

acre on dry land and 25 bushels per acre on irrigated land.

The development of irrigation in Lamb County has also led to greater livestock production. With more feed and more productive pastures made possible by irrigation, farmers have been able to increase substantially livestock numbers. The average livestock population on dry land pastures in the county is one head to 30 acres while livestock population on irrigated pastures averages three to four head per acre. The county's greater livestock production in recent years represents increases in the number of both beef and dairy cattle as well as in hog production.

To keep producing high agricultural yields, Lamb County farmers for the most part utilize the most advanced techniques of mechanized farming. An example of the progress in the use of mechanical power on the farm has been the growing use of mechanical cotton strippers. In 1948, there were 110 such machines in Lamb County. In 1950 there were 750. The cost of harvesting cotton with these machines is estimated to be about one-tenth the cost of picking the cotton by hand. Main problem in using the machines is to de-foliate cotton plants before harvesting the cotton. If harvesting operations can be postponed until the first frost defoliates the plants, the problem solves itself. But many times, farmers want to pick the crop as soon as

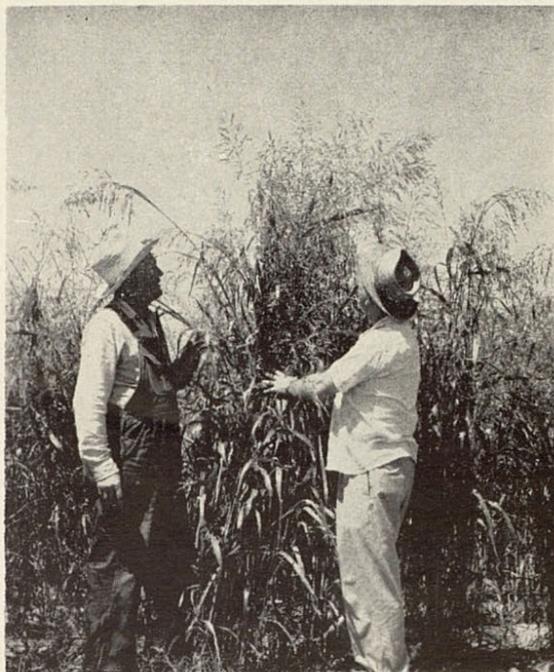


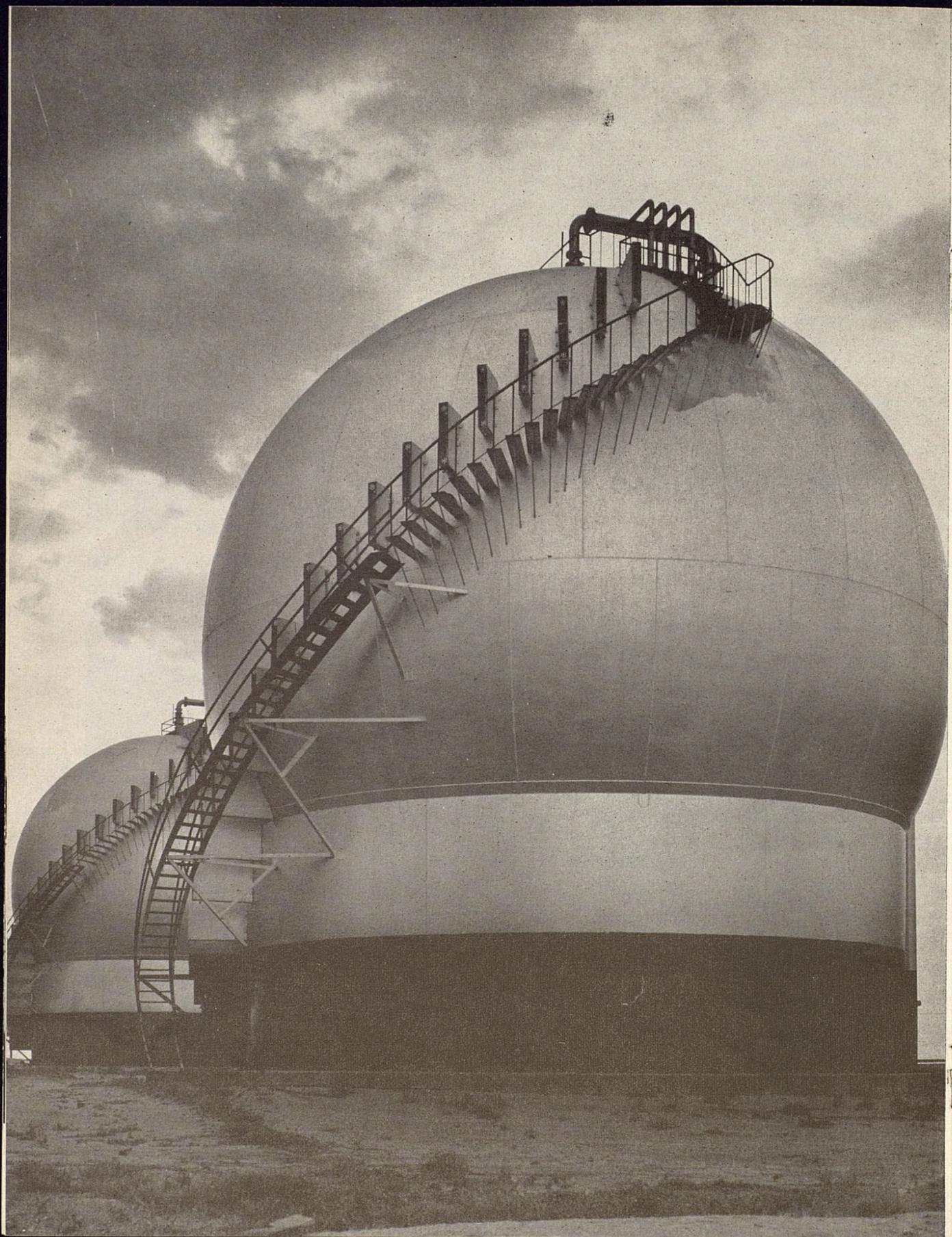
← These towering corn stalks are part of bumper crop grown on one of Lamb County's fertile irrigated fields. Irrigation has more than doubled crop yields for many farmers in the county.

it is ready. In such cases, chemical defoliating agents must be applied.

Although Lamb County farmers have made great progress in scientific agriculture, particularly in the development of crops and in the use of machinery, forward-looking farm operators are constantly testing new techniques and new methods which they hope will point the way to still more efficient agricultural activity. Much is yet to be learned about efficient irrigation practices, soil conservation, and soil rebuilding. The continuous experimental work of research workers and technicians in agriculture and industry as well as that of progressive farmers themselves aids in discovering solutions to agricultural problems every year, adding more and more knowledge to the already highly technical business of farming.

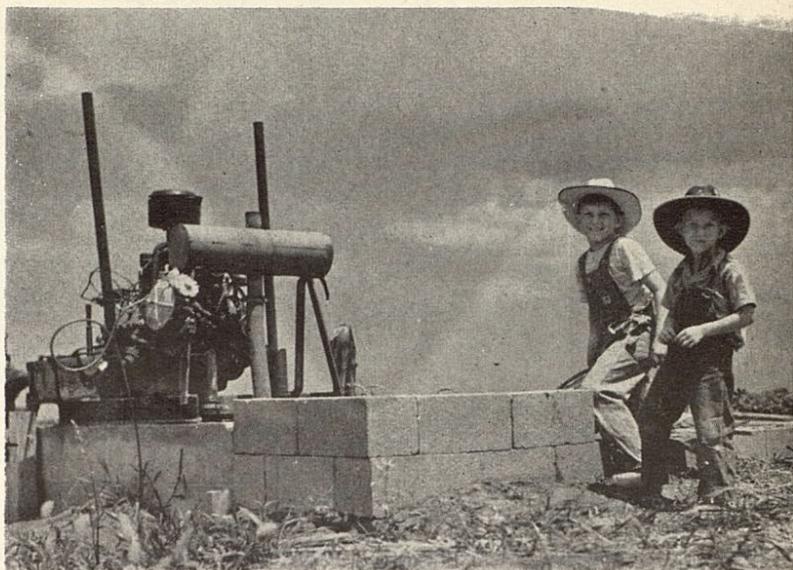
Right—Sudan grass produced on an irrigated farm near Littlefield. Below—Fields of grain sorghum such as this have made Lamb County the state's leading producer of this crop.





LP-Gas

*Dependable Source of Power
For Farm, Home, and
Industrial Use*



Two young Lamb County farmers pause for a drink at an irrigation well. LP-Gas powers this well and most others in the county.

Last year, the mechanical energy consumed by the tractors, trucks, irrigation pumps and other petroleum-powered machinery of American farmers amounted to 178 million horsepower. This was considerably more than the power used by all of this nation's factories put together.

Much of the power now used on American farms is supplied by liquefied petroleum gas, more commonly known as LP-Gas. This LP-Gas ordinarily consists of butane, propane or mixtures of the two and is a petroleum product that is gaining widespread use particularly in rural areas. LP-Gas is an exceptionally clean-burning fuel that is now used to heat homes, cook meals, drive tractors, heat stock tanks, refrigerate food, air condition homes and perform a great many other jobs about farms, homes, and industrial plants.

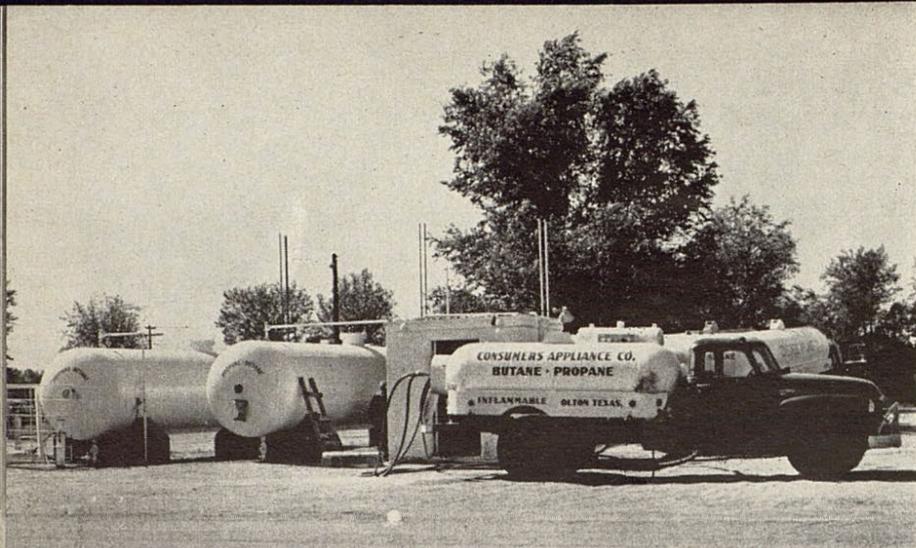
Here in the Panhandle of Texas, LP-Gas has been found ideally suited to power the pumps for the big irrigation wells of the vast

South Plains irrigation district. In Lamb County, Texas, for example, most of the 1,650 irrigation wells that water the fertile fields of that county are equipped with LP-Gas powered pumps. Farmers in the area who use LP-Gas in their irrigation operations like the economy and reliability of this efficient fuel.

LP-Gas, produced as a by-product of crude oil and natural gas for many years, has in recent years become an important end-product in itself. In the early history of the petroleum industry, LP-Gas was not only of little importance commercially, it was practically a nuisance. Until as recently as the early 1920's the transportation and handling of LP-Gas was more problem than profit for oil refiners and natural gas producers. LP-Gas is produced along with crude oil and natural gas. Under ordinary atmospheric conditions it is a gas. But when subjected to pressure, or when the temperature is lowered sufficiently, it becomes a liquid. It is this characteristic of the gas that made it troublesome for early day oil and gas producers. Today, however, this same characteristic—the ease with which it is converted from a gas to a liquid or back again is one of the qualities that makes it a boon to the industry and a convenient fuel for farm, home, and industrial use.

Oil producers two or three decades ago

← These huge spherical tanks are used to store LP-Gas at the Shamrock Oil and Gas Corporation's McKee Plants near Dumas, Texas.



LP-Gas dealers deliver fuel to customers in trucks such as this one operated by Consumers Appliance Company of Olton, Tex.

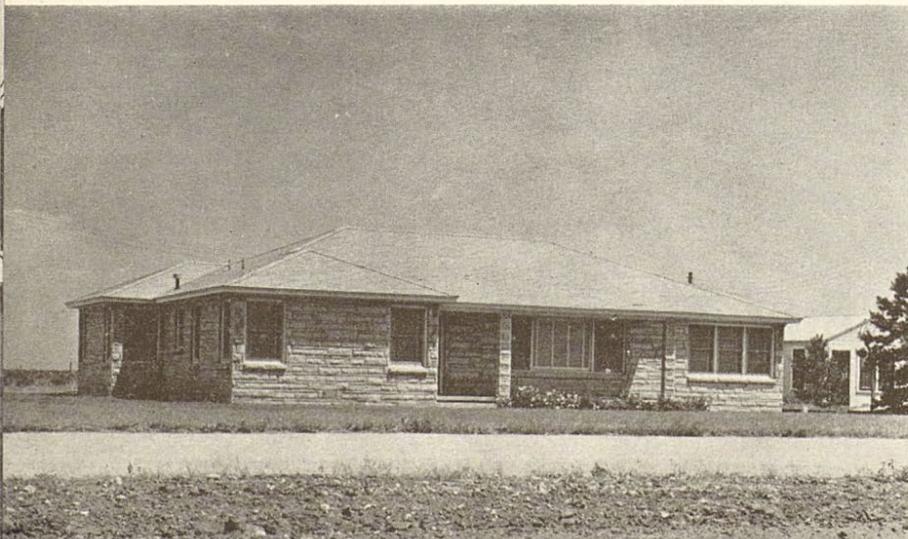
didn't like LP-Gas because they were in the business of producing and transporting liquids and all their equipment was designed for such a purpose. The LP-Gas, while it might come out of the ground mixed with the crude oil, soon vaporized into a gaseous form, was difficult to handle and had to be disposed of. The natural gas producers didn't like it either. They were in the business of producing and transporting gas. In cold weather, or in low places in their natural gas transmission lines, the LP-Gas would condense, necessitating the construction of traps of various kinds in the line to catch the liquefied gases. Then once the LP-Gases were caught, there was the same old problem of disposing of them.

Along in the twenties, a few oil and gas producers began bottling the LP-Gas in pressurized cylinders for sale as domestic cooking and heating fuel and as motor fuel. These early pioneers in the LP-Gas industry reasoned that the

very qualities which made it troublesome could actually contribute to its value. Why not build special pressurized LP-Gas storage tanks, save this problem product, then transport it under pressure into areas not served by natural gas pipe lines. Consumers could store it in small pressure tanks or cylinders; then, simply by releasing the pressure, they could have all the advantages of natural gas.

Since the first commercial utilization of LP-Gas more than 25 years ago, the demand for this important fuel has increased by leaps and bounds. Last year, more than three billion gallons were sold, an increase of more than 25 per cent over the preceding year and of more than 4,300 per cent in the past 15 years.

In the rich farming regions of the great Southwest, LP-Gas has gained wide acceptance, and new ways to use this versatile fuel are being found almost daily. Because farming operations in the Southwest are normally large compared



This modern farm home in the productive South Plains irrigation district is equipped with an LP-Gas furnace equivalent to natural gas central heating plants in similar urban homes.

to other parts of the country, farmers in this area use highly technical, mechanized methods. Mechanical power is all-important in such operations and LP-Gas has been found to be one of the most convenient and efficient sources for such power.

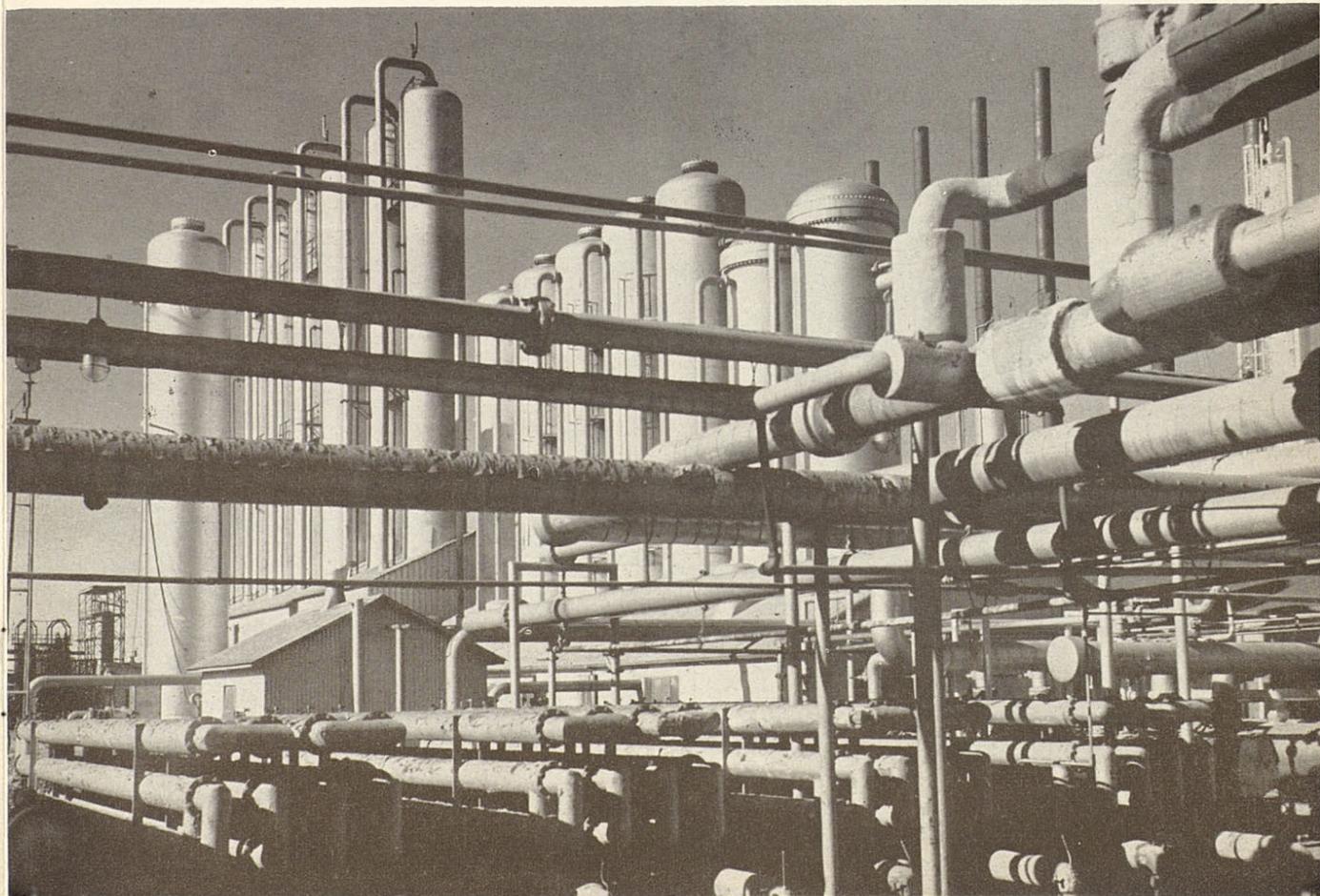
In the irrigation areas of the South Plains it is not uncommon to find LP-Gas performing a dozen different tasks on a single farm. One farmer in Lamb County, Texas, uses LP-Gas as fuel for his tractors and his four irrigation wells as well as in a number of brooder stoves in raising poultry. In his home, he uses it for heating, cooking, refrigeration, and water heating.

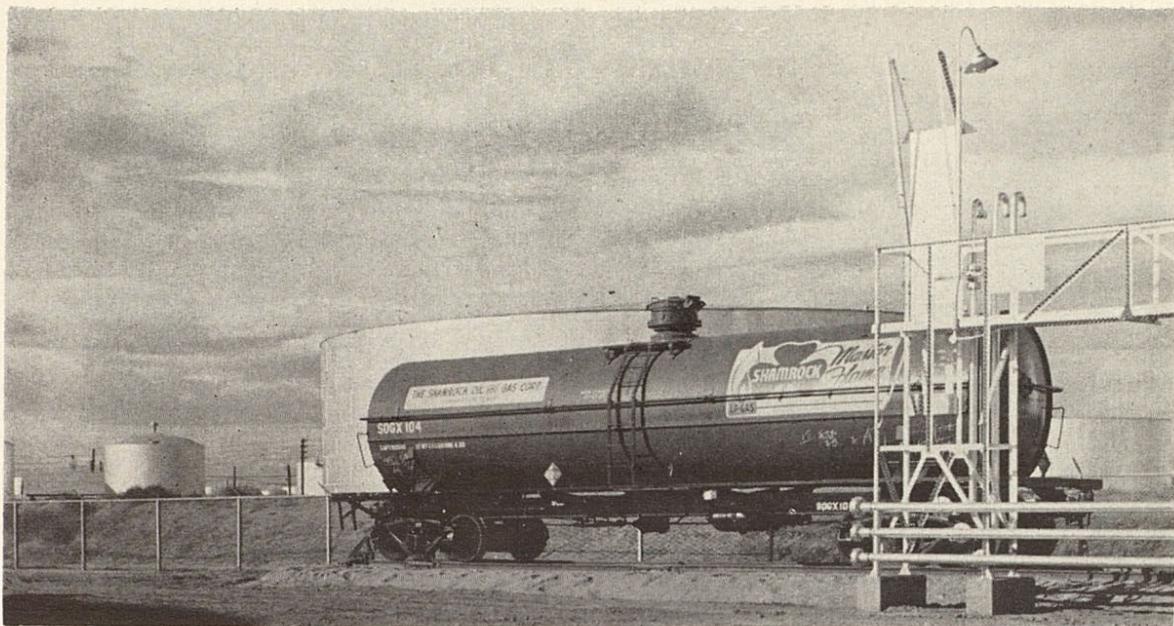
While the use of LP-Gas as fuel for tractors, trucks and other automotive engines is not new, it has had its greatest development in the last two or three years. Actually, the first commercial use for LP-Gas—more than 25 years ago—was to power farm tractors, but until comparatively recently, it has been most commonly thought of as fuel for domestic cooking

and heating. In the last few years, with the development of more efficient farm trucks and tractors, the need for clean-burning, high-performance motor fuels has become increasingly important. For many farmers, LP-Gas has been an ideal solution to power problems.

Although a few farm tractors are now being built specifically to use the LP-Gas, most are designed for gasoline or other fuels and must be converted. The procedure for converting a conventional gasoline engine to use butane, propane, or a mixture of the two is comparatively simple, however. Among the advantages of LP-Gas as motor fuel are its clean and complete combustion, its high power output and high anti-knock qualities. LP-Gas has considerably higher octane ratings than standard grades of gasoline. One farmer with extensive irrigation operations reported that after he converted his farm equipment to use LP-Gas, he reduced engine maintenance 93 per cent and cut fuel costs 42 per cent in one year. Most farmers who use LP-Gas in tractor, truck, and irrigation engines

A complex system of absorber and fractionation towers, connected by miles of pipe, extracts and processes LP-Gas at Shamrock's McKee Gasoline Plant.





Specially constructed tank cars transport LP-Gas by rail

LP-Gas storage tanks at Shamrock's La Junta pipe line terminal



say its use results in less oil dilution and less carbon formation than when using any other kind of motor fuel.

Domestic uses for LP-Gas have also increased substantially in the past few years. This has been brought about partly because the extraction of this fuel as an end-product rather than as a by-product assures consumers of a dependable year-round supply and partly because of the advancements made during recent years in LP-Gas appliances. No longer is it necessary for an LP-Gas user to convert his furnace, space heater, or kitchen range to use butane or propane. Major appliance manufacturers today make stoves, furnaces, air conditioning units, and refrigerators especially for LP-Gas users. Many farm homes even depend on LP-Gas to provide them with electric power by using LP-Gas powered engines in the operation of small electric generators.

To help meet the growing demand for LP-Gas in the Southwest, the Shamrock Oil and Gas Corporation has for a number of years operated modern, up-to-date processing and storage equipment especially designed to produce and distribute top-quality LP-Gas products. In the past few years, these facilities have been expanded several times to keep up with the growing demand for liquefied petroleum gases. Most of this equipment is located at Shamrock's main processing plant—the McKee Refinery and Gasoline Plant near Dumas, Texas. LP-Gas processing, storage, and distribution facilities are also located at the company's Liberal, Kansas, plant; and a products pipe line from the Panhandle of Texas to La Junta and Denver, Colorado, transports large quantities of LP-Gas to storage and distribution centers in those areas.

The story of LP-Gas begins at the oil and gas wells. Butane and propane are both present in natural gas produced in the Panhandle. Most natural gas comes from gas wells. Some, however, is produced from oil wells, in which case it is removed from the crude oil before the LP-Gas is extracted.

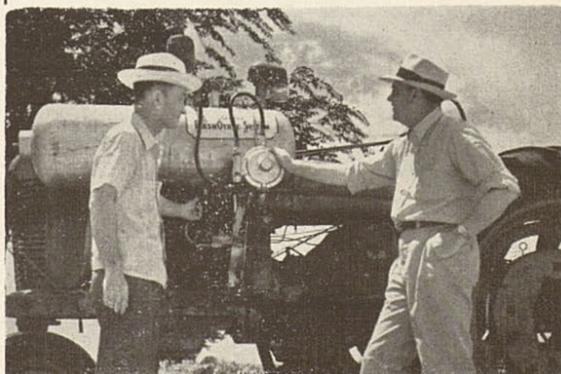
When produced from oil wells, natural gas is separated from the oil by processing the mixture through separators where the lighter natural gas is allowed to collect at the top while the crude oil is drawn off at the bottom. Natural gas extracted in this manner is then sent to the Gasoline Plant where it joins the gas collected from natural gas wells.

The LP-Gas present in natural gas is removed by passing it through oil absorber towers. In these towers, a special oil absorbs the comparatively heavy butane and propane and some other hydrocarbons, allowing the lighter gases of the mixture to be drawn off for further processing as natural gas. The oil, now saturated with LP-Gas and other heavy products, next goes into stills where the gases are boiled out and the oil returned to the absorbers to be used again.

From the stills the liquefied gases pass into fractionation towers where the products with the lowest boiling points are extracted first, products with next lowest boiling point are removed

On the Cover

Pictured on the cover are H. D. Thomas of Olton, Texas, and Ralph Roper, West Texas farmer who operates an irrigated farm north of Olton. Mr. Roper is one of the many progressive Southwest farmers who have increased the efficiency of their operations through up-to-date mechanized farming practices. In his farming operations, Mr. Roper makes extensive use of LP-Gas in providing power for his farm equipment as well as in furnishing fuel for cooking, heating, and refrigeration in his home. He operates four large irrigation wells and two tractors, all powered by LP-Gas. H. D. Thomas, co-owner of the Consumers Appliance Co., Shamrock LP-Gas distributor in the Olton area, is pictured with Mr. Roper inspecting LP-Gas carburetion equipment on one of the latter's farm tractors. Dealers like Mr. Thomas and his partner, Bill Yates, must not only keep customers supplied with LP-Gas, they must also be specialists in the safe and efficient use of this modern, versatile fuel.



next and so on until the mixture is completely divided into its component parts. Not all of these parts are LP-Gases, however. The very lightest which do not liquefy readily go back into the natural gas. Some, with higher boiling points than butane which boils at about 31 degrees Fahrenheit, are natural gasolines and are high octane products used in motor fuel blending.

All of the products of the gasoline plant—natural gas, natural gasoline, and LP-Gas—are thoroughly “scrubbed” with special chemicals to remove all traces of undesirable impurities. After processing, the LP-Gas is stored in big pressurized steel tanks. Specially constructed transport trucks, railway tank cars, and high pressure products pipe lines transport the butane and propane from Shamrock’s processing plants to distribution centers.

Most of the LP-Gas produced by Shamrock is sold to independent distributors who serve customers in their respective areas. These independent distributors usually own and operate their own storage and transportation facilities and often sell, install and service various kinds of LP-Gas appliances. Most of them are also equipped to adapt tractor, truck, and other internal combustion engines to the use of butane or propane. The LP-Gas dealers are specialists in the efficient and safe use of this economical source of power.

In servicing their customers, LP-Gas dealers transport the fuel in specially designed delivery trucks, transferring it to the storage tanks of the customers. Some consumers, particularly those in towns and cities who use the gas only for domestic cooking and heating, sometimes use small 24-gallon cylinders. The dealer ordinarily keeps these customers supplied merely by replacing the depleted cylinders with those which have been freshly charged. Larger users, however, find it more convenient and more economical to install larger tanks. Most farmers, particularly if they use the LP-Gas for irrigation purposes or for truck or tractor fuel, use the larger installations.

In addition to domestic and farm use of LP-Gas, new uses for this efficient fuel are being developed constantly. Many industrial plants and municipalities have installed LP-Gas systems to provide their fuel needs. Large quantities of LP-Gas are transported by railway tank car each year to industrial centers in the Great Lakes region. A number of towns and cities

normally served by natural gas pipe line have installed stand-by LP-Gas systems which can be put into immediate operation in event of an emergency.

In the future, it seems almost certain that LP-Gas is destined to play a more important role than ever in supplying the power needs of America. In carrying out our present large scale defense efforts, the demand for mechanical power is expected to be greater than ever before in our history. LP-Gas, like other petroleum products, will most certainly be called upon to play its part.

CREDITS—*Photographs used to illustrate the story about Littlefield and Lamb County were provided by the Littlefield Chamber of Commerce. Much of the information used in the article was also provided by the Chamber of Commerce. Dave Eaton, Lamb County Extension Agent, furnished much of the descriptive and statistical material about Lamb County farming operations.*

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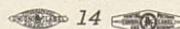
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