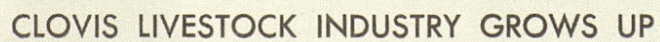


JULY 1950



STORY ON PAGE 6



Specialized types of machinery, such as the terracer pictured above, help modern farmers in preventing the erosion of valuable top soil.

For twenty years, Riley Wallace, Curry County, New Mexico, wheat farmer, has battled the Southwest's temperamental weather to make his fertile farm land produce profitably for himself and his community.

Wallace's farm in eastern New Mexico is made up of rich loam soil ideally suited to the production of wheat and grain sorghums. But to preserve this fertile soil and to operate his farm successfully, Wallace must constantly protect himself against some of the trick-

iest weather conditions in the nation. He must know how to keep his land from blowing when faced with a period of drought and strong winds lasting for weeks or even for months. He must also prepare his fields in such a way that heavy thundershowers will not wash away valuable top soil. When his wheat is ripe, he must harvest it as fast as possible to reduce the chances of loss from hail or heavy rains.

The fact that Wallace and the many other farmers who till the

Good Farming Methods Help Southwest Farmers Save Soil and Water

millions of acres in the Southwest have done a good job is one reason why the United States enjoys the highest standard of living in the world. For the past few years, the weather has been good to farmer Wallace and his neighbors. Unquestionably the abundant crops produced by Southwest farmers have been of great benefit to the nation during the war and post-war years. Good crops and good prices have also made it possible for the farmers themselves to increase their standard of living substantially. The Wallaces live in a new and completely modern farm home surrounded by trees and grass. And in the comfortable way in which they and their two sons live, they are no different from most of their neighbors.

But this year, Wallace, like thousands of other farmers of the Southwest, had his first crop failure in several years. Because of an almost complete lack of snow last winter and very little rain during the spring and summer, there simply wasn't enough moisture in the ground to produce a wheat crop. To complicate matters still further, the continuation of the drought into late summer was rapidly reducing the chances for grain sorghum or "row" crops.

More serious than the crop

Dick Barber, Soil Conservationist, and Riley Wallace, Curry County farmer, examine row of trees planted on Wallace farm to protect the field at right.



failures, however, the extended drought and the absence of growing crops on the land have caused farmers all over the Southwest to be gravely concerned over the possibility of severe dust storms.

"If we fail on our row crop and if the dry weather lasts through next winter and spring, we will be in bad shape," Riley Wallace explains, voicing the concern of many other farmers in the area.

Despite the threat of wind and dust, however, Wallace believes that farmers are much better prepared to cope with the hazards of the weather now than they have ever been before.

"We have the machinery and tractors now that make it possible for us to prepare the ground so that it won't blow the way it used to.

Few farmers have more firsthand knowledge of the disastrous results of hard winds on dry land than Riley Wallace. The tall, New Mexico farmer came to Curry County in 1907 as a small boy. In 1928, he married and a year later, he and Mrs. Wallace bought a farm of their own. Their first good crop was in 1931. That year they produced 18,000 bushels of wheat from the five quarters of land which they were farming. But, as veteran wheat farmers well remember, that was the year the price dropped to less than 20 cents a bushel—less than the cost of production!

Then came the dark period in Southwest history known as the "Dirty Thirties." One dry year followed another. Wallace planted his crops only to watch them dry up in the fields. And much too frequently, black "dusters" rolled in from the northeast, obscuring the sky for days at a time.

"Even with the windows and doors closed," Mrs. Wallace recalls, "the dust sifted into the house, covering everything with thick layers of dirt."

"After a bad duster, the dirt would be too heavy to sweep out and we would literally scoop it out of the house with shovels," she relates.

Although Wallace and other farmers well remember those dark days of the dust bowl, most of them feel that their chances of preventing another such disaster is good. They believe that the pro-

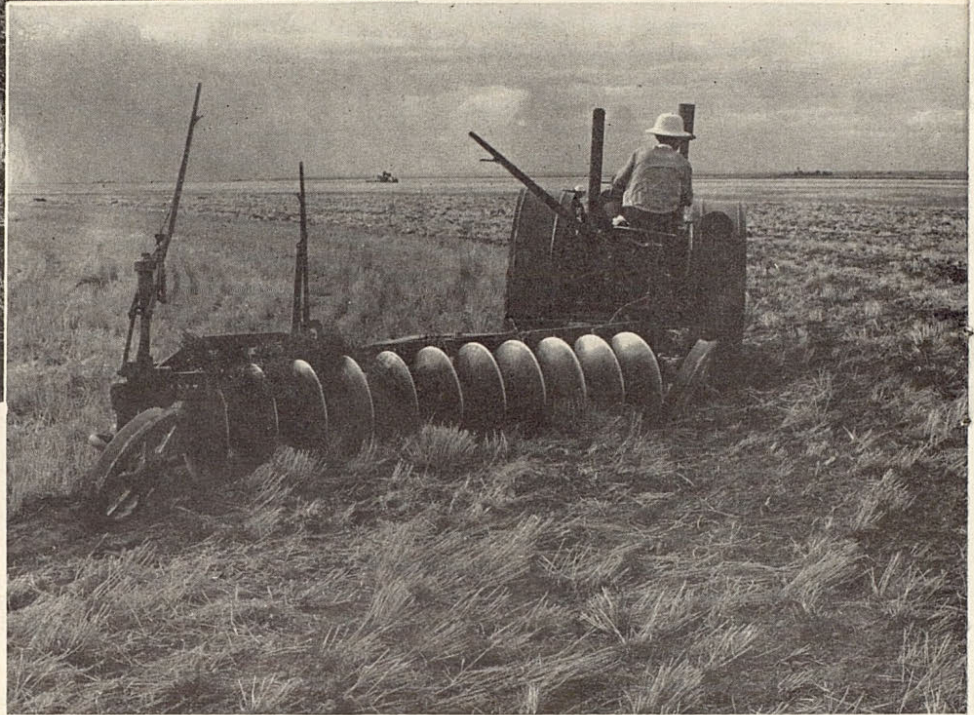


Mr. and Mrs. Wallace and their two sons, Jimmie (left) and Jerry (right) enjoy the comforts of a modern home on their Curry County farm. Mrs. Wallace (below) is particularly proud of well-kept lawn, shrubs and trees.





Wheat stubble field (left) shows how rows follow contour of field. Terrace can also be seen as slight elevation beginning at left and following rows. "Stubble Mulch" plowing leaves most of the straw on the field.



gress that has been made in soil and water conservation, together with improved machinery, has greatly reduced their primary hazard—unpredictable weather.

"Most farmers are more soil conscious than they used to be," Wallace explains. "They realize that if they don't take care of their land, someday they won't have any. Once the topsoil is gone, it is almost impossible to replace."

Evidence of the interest of Southwest farmers in soil conservation is the development of conservation districts throughout the area. Riley Wallace belongs to the Central Curry Soil Conservation District which includes all of Curry County and part of Roosevelt County, New Mexico. Or-

ganized in 1939, this district now includes more than one million acres and has more than a thousand operators.

The Soil Conservation District is a voluntary association of farmers and ranchers within the area.

The Curry District is administered by a board of five members. Three of these members are elect-

ed by other farmers and ranchers in the District and two are appointed by the State Conservation Committee. The board members or District Supervisors for the Curry District are: A. J. Reid, Chairman; J. L. Coffey, Vice Chairman; L. R. Snyder, Member; George E. Davis, Secretary; and R. Leon Marks, Treasurer. All five are farmers or ranchers who live within the District.

The ultimate goal of the district is to aid farmers and ranchers in getting every acre of land to its best use. The program of the district aims at improving farms and ranches through terracing, strip farming, construction of stock tanks, proper stocking, contour farming, planting of trees, and grass re-seeding. No farmer, however, whether he is in the District or not, is required to participate in activities of the District. To accomplish its program, the District calls upon various federal, state,

The picture below shows how terraces help to conserve water. By preventing water from running off field too rapidly, terraces also reduce erosion.



and local agencies for technical advice and services.

Probably the two groups most closely connected with program of the District are the County Extension Service and the U. S. Soil Conservation Service. H. M. Knapp is District Conservationist for the Curry District. A resident of New Mexico for many years and a trained conservationist, Knapp is thoroughly familiar with problems of the local farmers and ranchers. Curry County Extension Agent is John W. Gaume, while Phillip E. Crystal is Associate County Agent. In addition to their work of crop and livestock improvement, representatives of the County Extension Service work closely with farmers, ranchers, and other groups in the development of good soil conservation techniques.

One of the outstanding achievements in the development of soil and water conservation has been the widespread construction of terraces throughout the District. Like most other Curry County farmers, Riley Wallace has built terraces on most of his land. These terraces run at right angles to the slope of the land. By plowing along the contour parallel to the terraces, Wallace can keep water from running off from his fields so fast that serious erosion might result. Also by retaining more water on the fields by means of the terraces and contour farming, he is able to get along with less rainfall than would otherwise be possible. By such farming techniques, he is more likely to keep some vegetation on the land, even in extremely dry years, thus reducing the danger of wind erosion.

The primary aim of most farmers in the region in the prevention of wind erosion is to keep some vegetation on the land at all times. To do this they practice a diversified type of farming so that a failure of one crop will not leave the land bare for the entire year. Farm machinery has also been developed

to aid farmers in preventing blowing. Several good plows have been especially designed for dry land operations. By skillful use of these plows, farmers plow wheat fields in such a way that most of the stubble from previous crops is left on top of the ground. This type of plowing is called "Stubble Mulch" plowing.

A good indication of the faith which residents of Curry County have in the ability of farmers of the region to cope with the hazards of the weather is the development of business enterprises in the past few years. Most of these enterprises, such as the cattle feeding business, the grain industry, and

See GOOD FARMING Page 9

The new grain terminal of the Curry County Grain Company (top) and the new Farmers Co-Op elevator (below), still under construction, will increase storage facilities in Clovis by more than one million bushels.

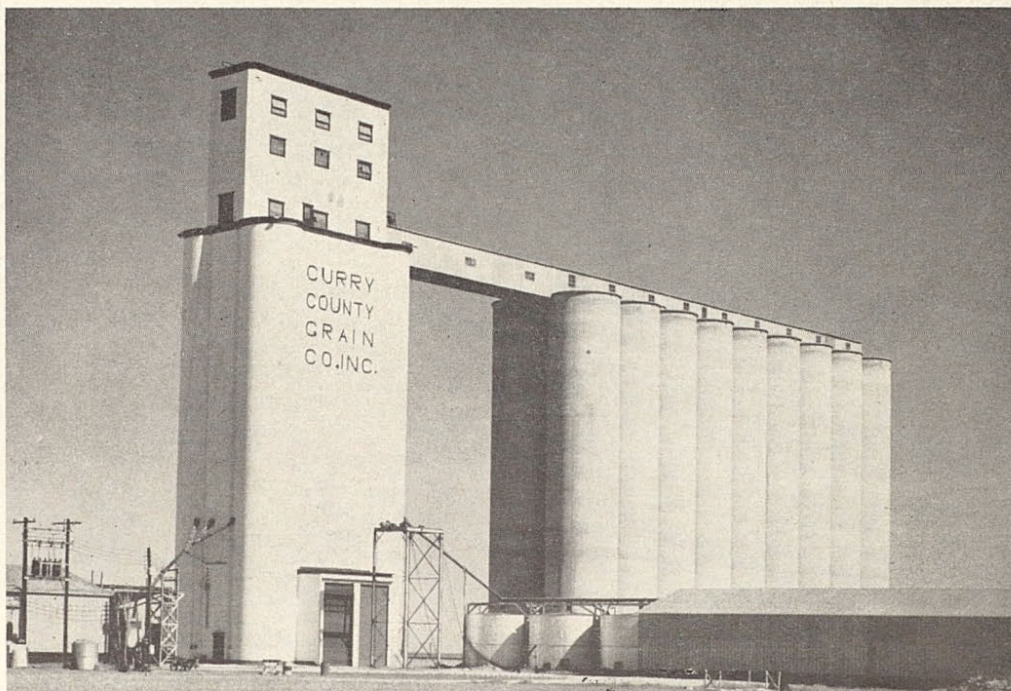
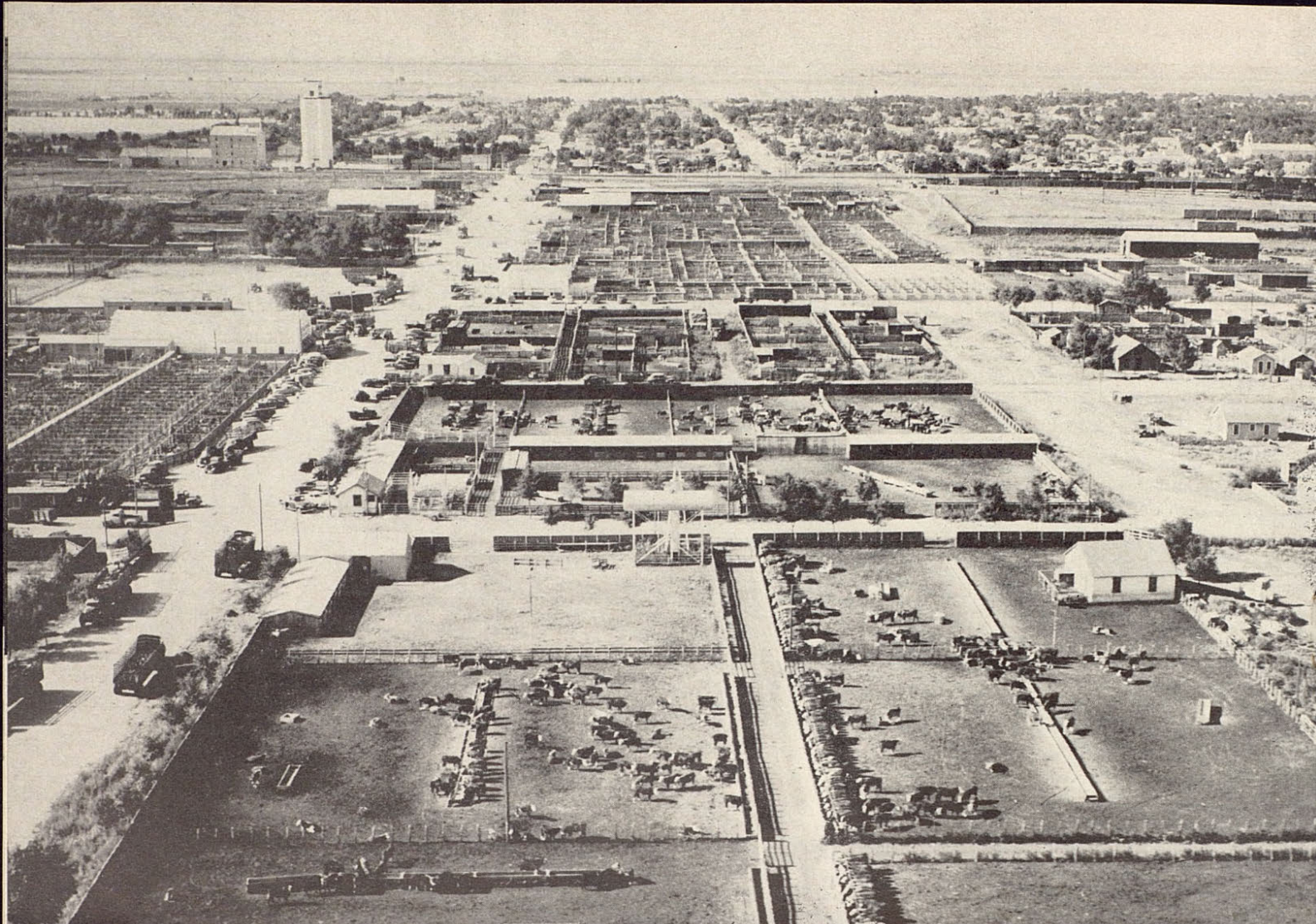


PHOTO CREDITS—*Photographs of scenes in Clovis, New Mexico, and vicinity in this issue of THE SHAMROCK were used through the courtesy of the Clovis Chamber of Commerce; Sass Studio, Clovis; Melton Studio, Clovis; U. S. Soil Conservation Service; and Phillip E. Crystal, Associate County Agent of Curry County.*



Center of the Clovis Livestock Industry is the busy stockyard area above.

Clovis Livestock Industry Grows Up

Because of the phenomenal growth of the cattle industry in its surrounding area, Clovis, New Mexico, has now become one of the leading livestock markets in the Southwest. This year, despite dry weather and crop failures, business leaders in the Clovis area expect the combined livestock industry in Clovis and immediate vicinity to do a gross business of more than \$75,000,000.

The development of the livestock industry in Clovis has been accomplished almost entirely within the past ten years. Prior to World War II, livestock marketing in the area was a small-scale business with no regular auction facilities. Today, farmers, ranchers and commercial feeders may use the

facilities of two well-equipped auction rings which hold scheduled sales each week. The commercial feeder business has also grown to major proportions within the past few years. Still another activity, closely related to the livestock business, which has become an important business enterprise in the community is the manufacturing of livestock feeds.

The development of the livestock industry in Clovis has resulted from foresight and careful planning on the part of a great many community leaders. Most of the business men engaged in various phases of the livestock business started their individual enterprises on a small scale during the last few years. They knew, however, that

Clovis had all of the qualifications to become an important livestock market. And they were able to work together for the good of the community as a whole.

An important event in the development of the Clovis livestock industry was the organization in 1945 of the Clovis Stockyards Association. This organization got its start one afternoon when five Clovis cattle men, during a conversation at a livestock sale, began to discuss the possibilities of developing the community's livestock industry. The men were Bud Williams, Ben Davidson, Ted Waldhauser, J. S. Jersig, and Ernest Knott. During the course of their conversation they decided to organize the Stockyards Association.

tion to promote their idea of building Clovis into a leading livestock market. Although the first members of the association were men engaged in the livestock business in some form or other, they soon invited other business leaders in the community to join the group. There are now about 50 members in the Stockyards Association. Ted Waldhauser is president of the group.

How well the men who make up the Stockyards Association, as well as other civic-minded individuals and groups, have done in making Clovis a livestock marketing center can best be pointed out by describing some of the individual enterprises and activities that make up the livestock industry.

During the first six months of this year, the community's two livestock auction rings did a gross business of more than \$15,000,000. Total receipts for the two sale rings amounted to 126,355 head of cattle, and 2,817 horses for the first half of the year. The two Clovis auction rings are the Ranchers and Farmers Livestock Sales Company and the Clovis Cattle Commission Company. The oldest of these two companys, the Clovis Cattle Commission Company, was founded in 1944—less than seven years ago—while the other firm was organized in 1948.

Another important activity around the busy Clovis stockyards is the commercial feeder business. Seven commercial feeder firms, operating on a year-round schedule, feed approximately 75,000 head of cattle per year. Ten years ago commercial feeders were feeding less than 1,000 head per year. Operating the commercial feeder firms in Clovis are W. D. Mack, W. C. McBride, Bob Moffatt, Booky Williams, L. B. Merrill, Southwestern Feed Yards and Waldhauser Feed Yards.

With the development of commercial feeding in the area, another business enterprise devoted to the manufacturing of commercial feeds has been established in Clovis. This enterprise, the El Rancho Milling Company manufactures feeds for range and dairy cattle, horses, calves, hogs, poultry and rabbits. Organized in 1946, the El Rancho Company's sales now amount to approximately \$165,-

SHAMROCK DEALERS IN CLOVIS AND VICINITY

CLOVIS OIL COMPANY

C. C. Witherspoon
N. Commerce Way Clovis

FREDDIE'S SERVICE STATION

N. Commerce Way Clovis

LOVETT MOTORS AND SERVICE

E. L. Lovett 1407 N. Main

REAL SERVICE

S. M. Tidwell Hiways 60, 70 & 84

BELL'S SERVICE STATION

501 West Grand Clarence E. Bell

ALAMO SERVICE

R. J. Demmick 601 East First

ROACH SERVICE STATION

Lee Roach 5th & Pyle Streets

STOCKYARDS SERVICE STATION

O. D. Johnston — Ted Lowrey
100 Hull Street Clovis

PINE COURTS & STATION

M. W. Reeves Route 3

MIDWAY SERVICE STA. & GROCERY

G. A. Griego Vaughn

ROSEDALE MERCANTILE CO.

R. G. Hudson Rosedale

HIWAY GAS MART

U. G. Firestone Melrose

JOHN'S STATION & GROCERY

John B. Williams Fort Sumner

ENCINO OIL CO.

Murray Cravens Encino



The cover this month portrays a scene during a cattle sale at one of the two Clovis livestock auction rings. The facilities of these two rings are available to cattle buyers and marketers on regularly scheduled sale days each week. During the summer months, sales are ordinarily scheduled two days per week, while four sales a week is customary during the winter when trading is more active. A horse and mule sale is also held every two weeks at one of the rings. Plans have been made to initiate a sheep sale some time this fall.

So far this year, receipts of the two auction rings have totaled more than \$15,000,000. This important cattle market has been developed almost entirely during the past ten years.

Clovis is a natural livestock market because of its location. The progressive New Mexico city is adjacent to large ranching area; it is the center of a good feed-producing area; and it has good rail and truck transportation in and out of the region.

Range cattle are fed and fattened for market in feed yards such as these by Commercial Feeder businesses operating in the Clovis Stockyards area.





Growing livestock industry has increased local market for feed crops.

Specially prepared feeds fatten cattle for market in Clovis feed lots.



000 per month. About 20 per cent of this gross business comes from commercial feeders in the stockyards district. The remainder is derived from sales to retail outlets throughout New Mexico, Texas, Arizona, and Oklahoma. Utilizing produce grown locally as much as possible, the feed manufacturing firm provides a market for much of the grain sorghum grown in the area. In order to produce well-balanced, palatable feeds, however, the El Rancho Company buys large quantities of molasses, cotton seed meal, dehydrated alfalfa, and minerals from other areas.

The confidence which the leaders in these various livestock enterprises have in the future of their community and industry is best expressed by widespread expansion and improvement programs. Nearly all of the commercial feeder businesses are either presently engaged in enlarging their facilities or plan to do so in the near future. One firm which has recently installed pens and feeding facilities just west of Clovis has also installed feed grinding and mixing equipment capable of processing from eight to ten tons of feed per hour. This firm, Southwestern Feed Yards, is equipped to feed about 4,000 head of cattle at one time. The Clovis Cattle Commission Company is also planning to expand its activities this year with the establishment of a regularly scheduled sheep sale.

In addition to the foresight and judgment which local business and civic leaders have used in developing the Clovis Livestock industry, there are several good, sound geographical reasons why the community has become a livestock center. Clovis is in one of the most important range beef producing areas in the Southwest. Large quantities of feed crops are produced locally. And both rail and truck transportation is good in and out of the area. But even though Clovis has a number of geographical advantages, it is the initiative of its leaders and the cooperation of its citizens that has made it the "Cattle Capital of the Southwest."

GOOD FARMING . . .

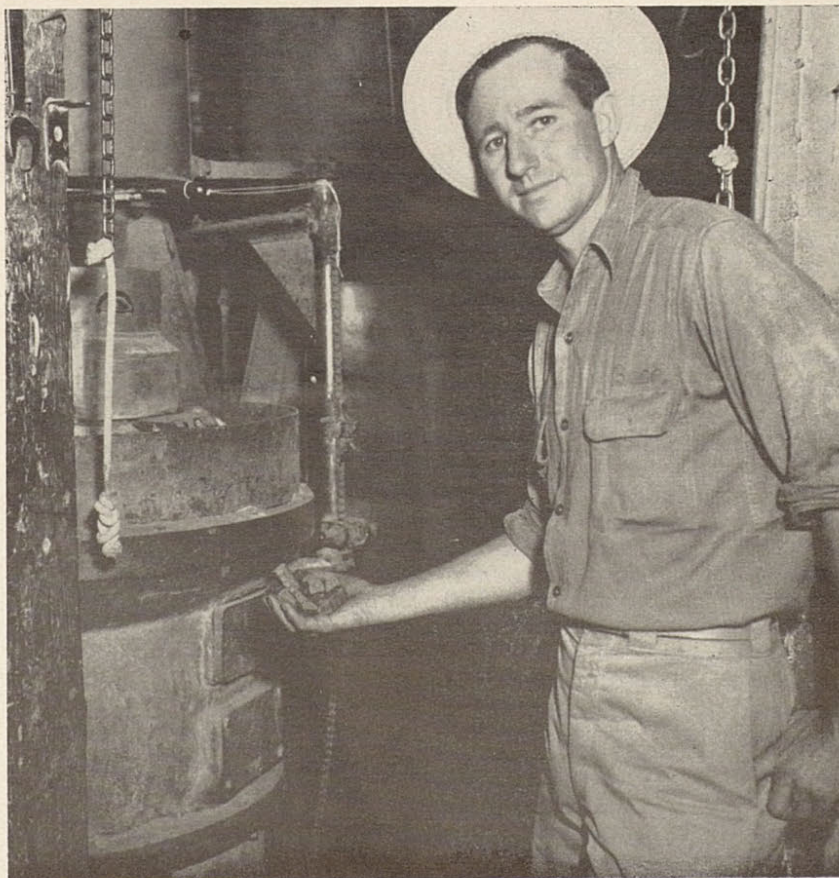
the feed manufacturing business are closely related to farm operations in the community. Not only have these businesses grown in the past few years, partly because of the agricultural prosperity which the community has enjoyed, but all are carrying out various current expansion projects in anticipation of the continued prosperity of the area.

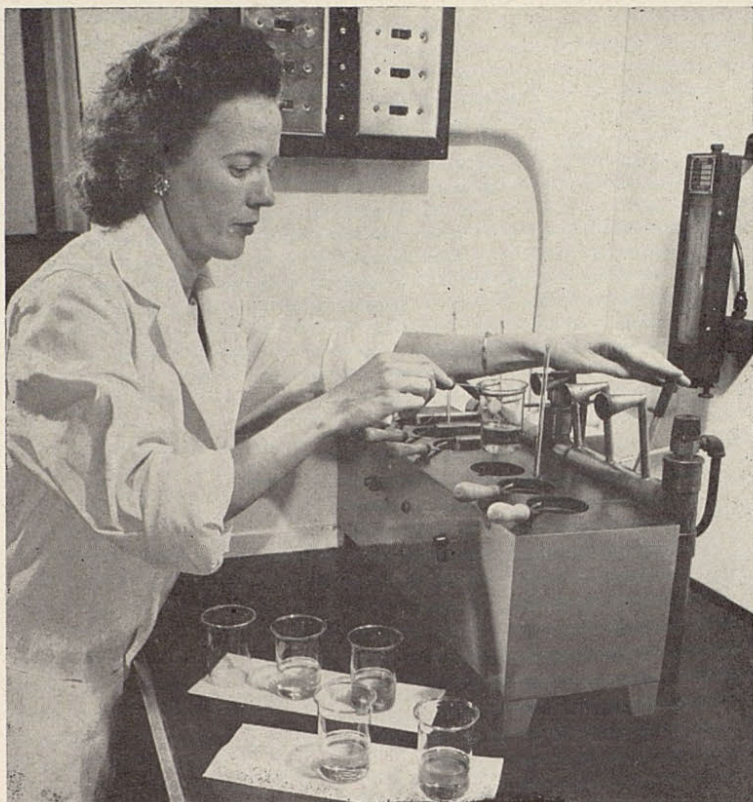
Despite the current failure of the wheat harvest in Curry County Clovis grain dealers are confidently going ahead with large scale expansion programs. The Curry County Grain Company completed a new terminal this year, and the Farmers Cooperative Grain Company is now constructing a major addition to its facilities. These two projects alone have increased grain storage facilities in Clovis by more than one million bushels during the past year.

It is true, of course, that in Southwest farming operations,

there is always the threat of crop failures resulting from dry weather, dust storms, hail or sudden out-of-season thunderstorms. No one understands this better than experienced farmers like Riley Wallace, the soil conservationists who provide these farmers with advice and services, or the business men of the area who depend upon farm prosperity for much of the success of their own enterprises. The progressive activities of these three groups in Curry County, however, indicate that they believe their community will be engaged in profitable agricultural undertakings for many years to come. As a basis for their hopes, these farmers, business men, and agricultural experts point to the development of newer and better farm machinery, the establishment of aggressive programs of soil and water conservation, and—most important of all—to the experience and progressiveness of farmers like Riley Wallace.

Feed pellets displayed by El Rancho Milling Co. employee might be called "candy bars for cattle." They have been compounded for both flavor and nutrition from grain products, cotton seed meal, minerals, and molasses.





The laboratory technician above is performing tests on samples of gasoline to determine exact amount of dissolved gum present.

Rigid Laboratory Tests Control Gasoline Quality

Thousands of motorists are faithful users of Shamrock Cloudmaster and Shamrock Trailmaster gasolines with CycloPower because of their power and performance. Yet probably not one in a hundred car owners realizes all that goes into that power and performance. To the average driver, a good gasoline is simply something that makes his car operate satisfactorily. Actually, gasoline performs not one but a combination of jobs.

Fast starts, rapid acceleration, smooth power and economical operation are some of the jobs that gasoline performs. And it must do those jobs for all sorts of vehicles and under all kinds of driving conditions. As a result, gasoline quality depends upon a number of characteristics, all of which must be carefully selected and scientifically controlled.

To understand these characteristics more completely, one must understand that all gasolines are composed of chemical compounds called hydrocarbons, which are combinations of hydrogen and carbon. There are literally hundreds of hydrocarbons, which dif-

fer, among other things, in their boiling temperatures. Because of their varying properties, the characteristics of each class of hydrocarbons must be taken into consideration in the refining of gasoline.

Obtaining the desired characteristics in a finished motor fuel entails many things. It includes selecting the most suitable crude oils, refining those crudes by modern processes in order to obtain high octane gasoline fractions, blending those fractions into finished gasoline, and finally, adding tetraethyl lead to give it the desired antiknock quality.

The over-all quality of gasoline is determined by such characteristics as octane number, volatility, vapor pressure, and storage stability, and by the presence of such impurities as gum and sulphur. Of all of gasoline's characteristics, octane number and volatility are probably the two most important. Octane number is a measure of the gasoline's ability to produce power in modern engines, while volatility denotes its tendency to vapor-

ize, and deliver that power, at all engine speeds.

The importance of antiknock quality becomes clear when you consider what happens when gasoline is burned in an engine.

Under normal combustion, the burning of the fuel proceeds smoothly and evenly across the combustion chamber, delivering a smooth power thrust to each piston. However, when gasoline of inadequate antiknock quality is used, the combustion becomes abnormal, and the phenomenon known as knocking takes place. Then, instead of a smooth power thrust, the piston receives a sharp hammer-like blow. Under these conditions, the engine of course is not operating efficiently. Unchecked, knocking will seriously damage and overheat the engine.

In order to operate today's modern high compression engines efficiently, then, a gasoline must have high antiknock quality. The antiknock quality of a gasoline is measured by standard tests on a specially designed laboratory knock test engine, and is express-

ed in terms of octane numbers. During the test, the gasoline is used as fuel for the engine, and made to knock at a standard intensity by varying the engine's compression ratio. Then the fuel system of the engine is switched over to supply so-called reference fuels. These reference fuels are of known octane rating. By selecting a reference fuel that produces the same intensity of knock as the sample fuel, the octane number of the test sample is established.

It is one thing for a gasoline to be able to produce sufficient power, but that gasoline must also be able to supply that power readily at all engine speeds and under all sorts of driving conditions. It is here that the factor of volatility comes into play.

Volatility, which means the readiness with which a liquid evaporates, is dependent upon the boiling point and the vapor pressure of that liquid.

All gasoline fractions, it was previously pointed out, have their individual boiling points, which range from around 30° F. to about 450° F. On the one hand, those fractions which boil below 150° F. are classified as light fractions. At the other extreme, those hydrocarbons which boil above 300° F. are known as heavy fractions. In order to produce gasoline of balanced volatility, the proper percentages of light, medium and heavy fractions must be blended together.

Volatility is of great importance to engine starting, warm-up, and acceleration, and of any tendency towards crankcase dilution and



Distillation test above determines volatility of gasoline. Volatility must be carefully controlled to provide best performance for varying conditions.

vapor lock. These characteristics are measured in the laboratory by means of a simple distillation test. In this test, a sample of gasoline is heated, and the gasoline vapors thus created are condensed and then recovered in a receiving graduate. The temperature of the gasoline vapors is recorded when successive percentages condense in the receiving graduate, until the entire sample has been evaporated. A distillation curve is then plotted which shows the vapor temperature versus the percent of sample distilled.

Three points along this curve are of great interest in relating the volatility characteristics of a gasoline to engine performance. These are the points at which 10%, 50%

and 90% of the fuel sample is evaporated.

The "10% point," as it is commonly called, is of primary importance as a specification related to engine starting. Other factors being equal, the lower this temperature, the better the starting characteristics of the gasoline. The 50% point is considered a good index of the engine warm-up characteristics of the gasoline; the lower the 50% point temperature, the faster the warm-up. The importance of the 90% point becomes clear when it is realized that the presence of very heavy ends (high-boiling components) in a gasoline is likely to cause poor mixture distribution in the intake manifold and therefore may effect engine performance during acceleration. Also the presence of a large portion of such materials may lead to crankcase dilution, which results from the failure of fuel to evaporate and burn. The 90% point temperature provides a good indication of the fuel performance in this respect.

While sufficient volatility is an important aim, care must be taken that the gasoline is not excessively volatile. In that event, the gasoline would vaporize too rapidly in the fuel system of a car. The re-

Today's modern efficient high compression engines need the superior quality of Shamrock Cloudmaster gasoline to develop maximum performance.



sulting bubbles of fuel vapor cause lean mixtures and even starvation of the engine. When that happens, the engine operates unevenly or stalls completely. This latter condition is known as vapor lock.

For these reasons, the vapor pressure of the fuel must be carefully controlled to assure a gasoline that fits the prevailing seasonal temperature. The vapor pressure must be high enough to permit the use of the required amount of low boiling fractions, yet not so high that excessive vaporization will result.

Many people don't realize that Shamrock produces a different motor fuel for each season of the year. Warm weather driving requires a fuel with a lower percentage of light fractions, winter weather for a high percentage, and Spring and Fall temperatures for just the right in-between percentage. That is why the volatility of Shamrock Cloudmaster and Shamrock Trailmaster changes from season to season.

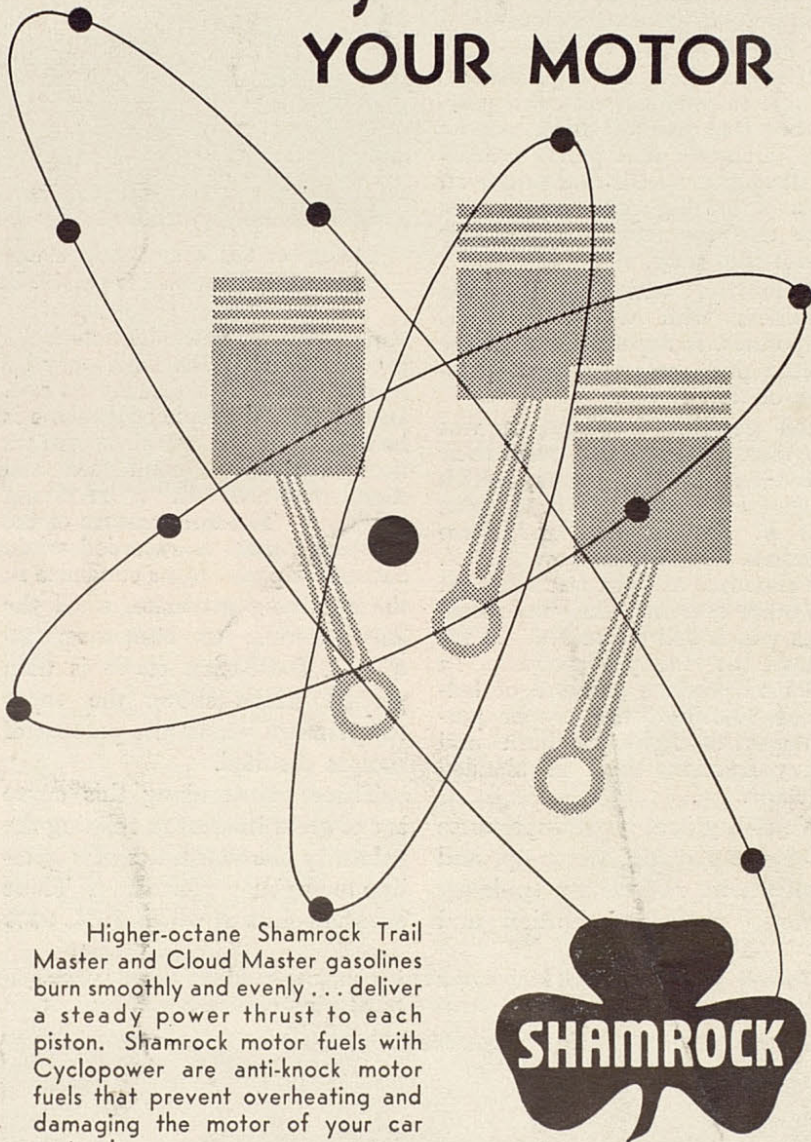
Besides incorporating in Shamrock gasolines the most desirable qualities of a motor fuel, strict attention is paid controlling and eliminating the objectionable properties sometimes inherent in petroleum and gasoline. These properties, such as gum and sulphur, adversely affect engine performance. The high purity of Shamrock gasolines protects the engine against corrosion, promotes engine cleanliness, and assures longer engine life.

As can be seen, producing gasolines of the best characteristics calls for great skill from beginning to end. The quality of Shamrock gasolines is carefully controlled from the time they are first refined until the finished gasolines are marketed.

Not only must the finished gasolines be completely satisfactory from the refiner's standpoint, but they must also meet the fuel requirements of the car population. These requirements are constantly changing as old cars are scrapped and new cars are added. Keeping Shamrock gasolines abreast of these changing fuel requirements is a major aim of the company.

Higher Octane SHAMROCK Gasolines

CycloPower YOUR MOTOR



Higher-octane Shamrock Trail Master and Cloud Master gasolines burn smoothly and evenly... deliver a steady power thrust to each piston. Shamrock motor fuels with Cyclopower are anti-knock motor fuels that prevent overheating and damaging the motor of your car or truck.

For flowing power, fast starts, rapid acceleration and economical operation, try Shamrock's Trail Master or Cloud Master today! They're CYCLOPOWERED for better performance!



Trail Master Gasoline
Cloud Master Gasoline
Shamrock Motor Oils
and Greases

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