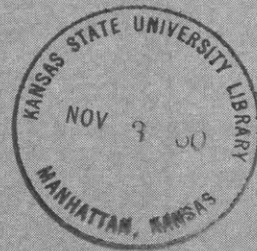


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KANSAS STATE UNIVERSITY

Ag Student



OCTOBER 1960

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Compare the
Platforms

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Treat Your Guests

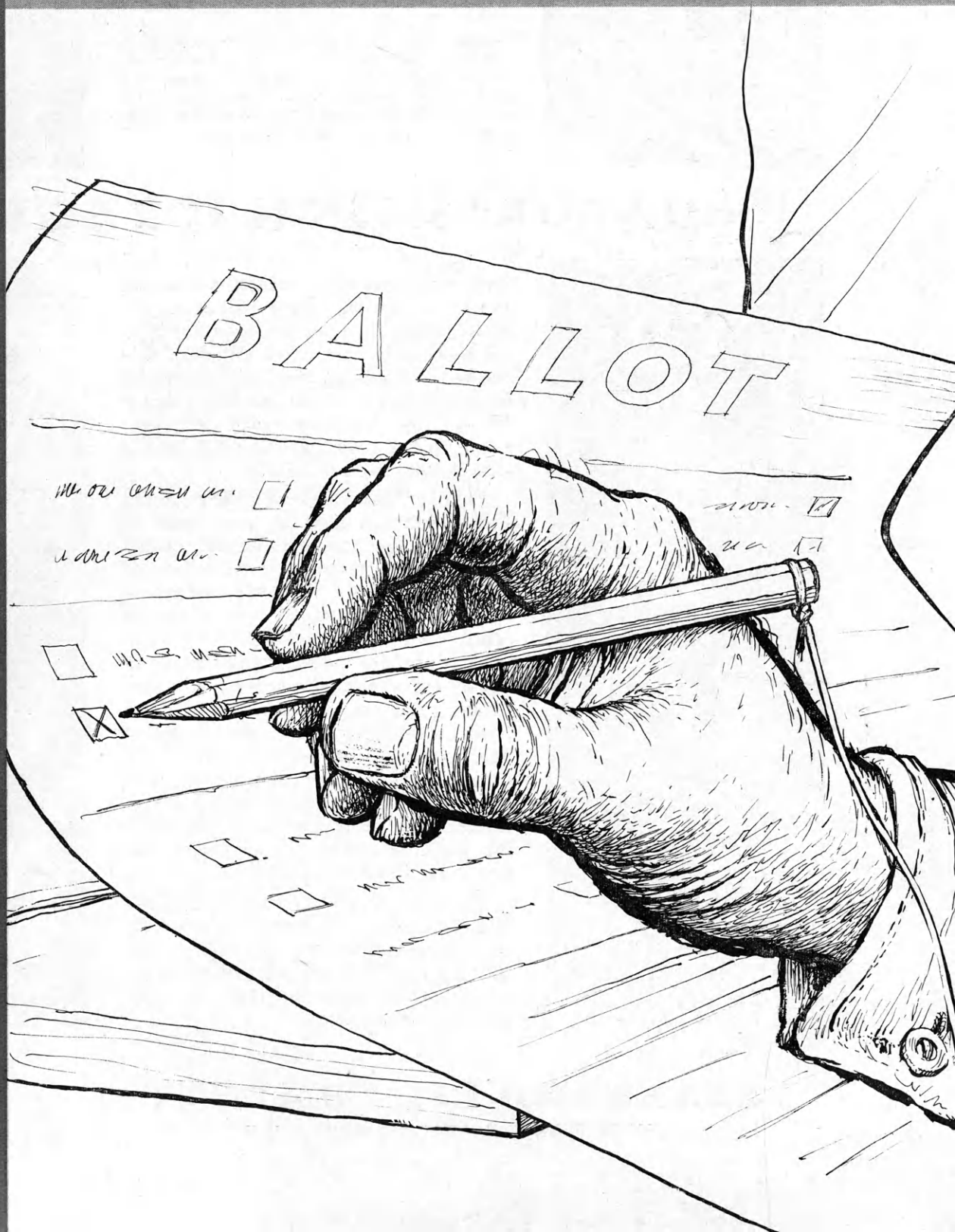
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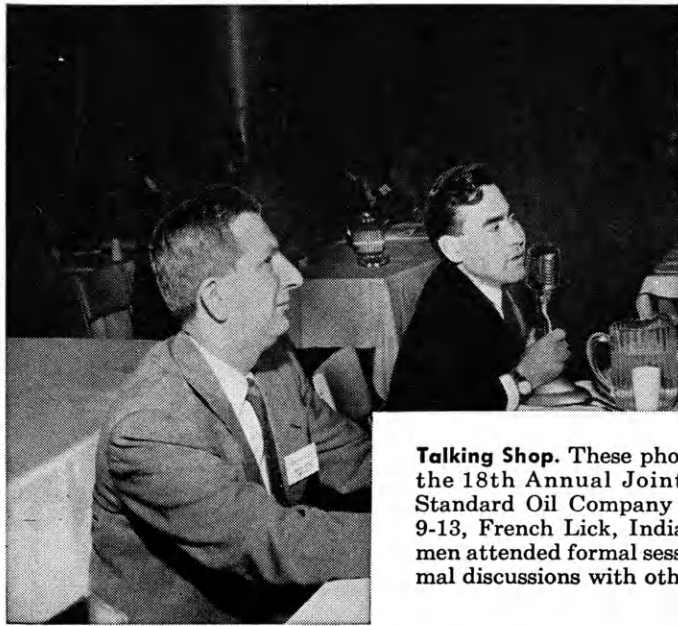
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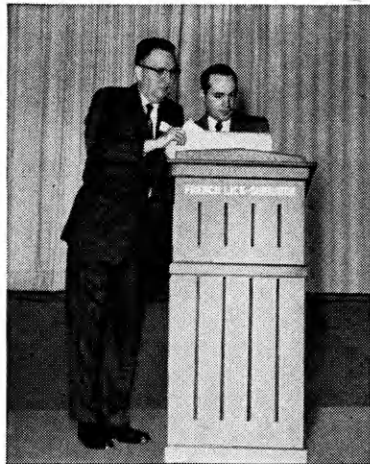




Talking Shop. These photographs were taken at the 18th Annual Joint Technical Meeting, Standard Oil Company and its affiliates, May 9-13, French Lick, Indiana. More than 350 oil men attended formal sessions and enjoyed informal discussions with other scientists.



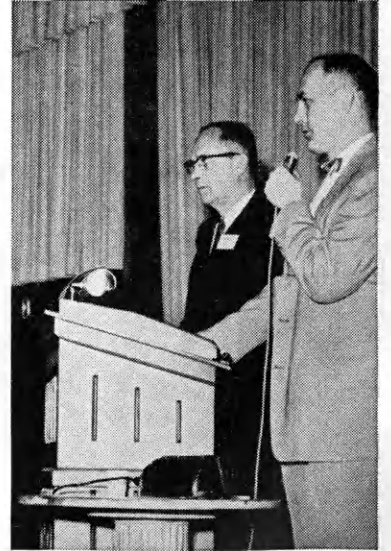
"SHOP-TALK" SESSION FOR SCIENTISTS



In a company where scientific research ranges all the way from palynology to metal stress, the need for an exchange of information is imperative. Much of this can be accomplished with written reports. However, Standard Oil has found that a "Shop-Talk" conference once each year accomplishes a meeting of scientific minds that is even more satisfactory.

This year, at Standard's 18th Annual Joint Technical Meeting more than 80 technical papers were presented to 350 technical experts and representatives of other departments. Discussed were such subjects as the potential use of atomic energy as a commercial fuel source, electronic computer controls, and the use of \$80-an-ounce platinum in making higher octane gasolines. In addition to these formal meetings, small discussion groups and conversations between individuals contributed to the exchange of ideas. The result was a stimulating five-day period that saw new ideas take shape. The meeting benefited everyone—scientists, the company, and consumers.

This type of meeting, which Standard pioneered, is another example of scientific leadership by Standard, and another reason why men with technical training find a Standard Oil career offers unusual creative encouragements.



STANDARD OIL COMPANY

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THE SIGN OF PROGRESS...
THROUGH RESEARCH

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EDITOR

Arnold Good



ASSOCIATE EDITOR

Norman Werner

HOME EC EDITOR

Margaret Cooper

BUSINESS MANAGER

Dave Schawe

CIRCULATION MANAGER

Neil Dowlin

STAFF WRITERS

David Good

Terry Knowles

Ronald Yates

Nancy Smith

Linda Hitchcock

Doris Imhof

PHOTOGRAPHERS

Jerry Hiatt

Phillip Smith

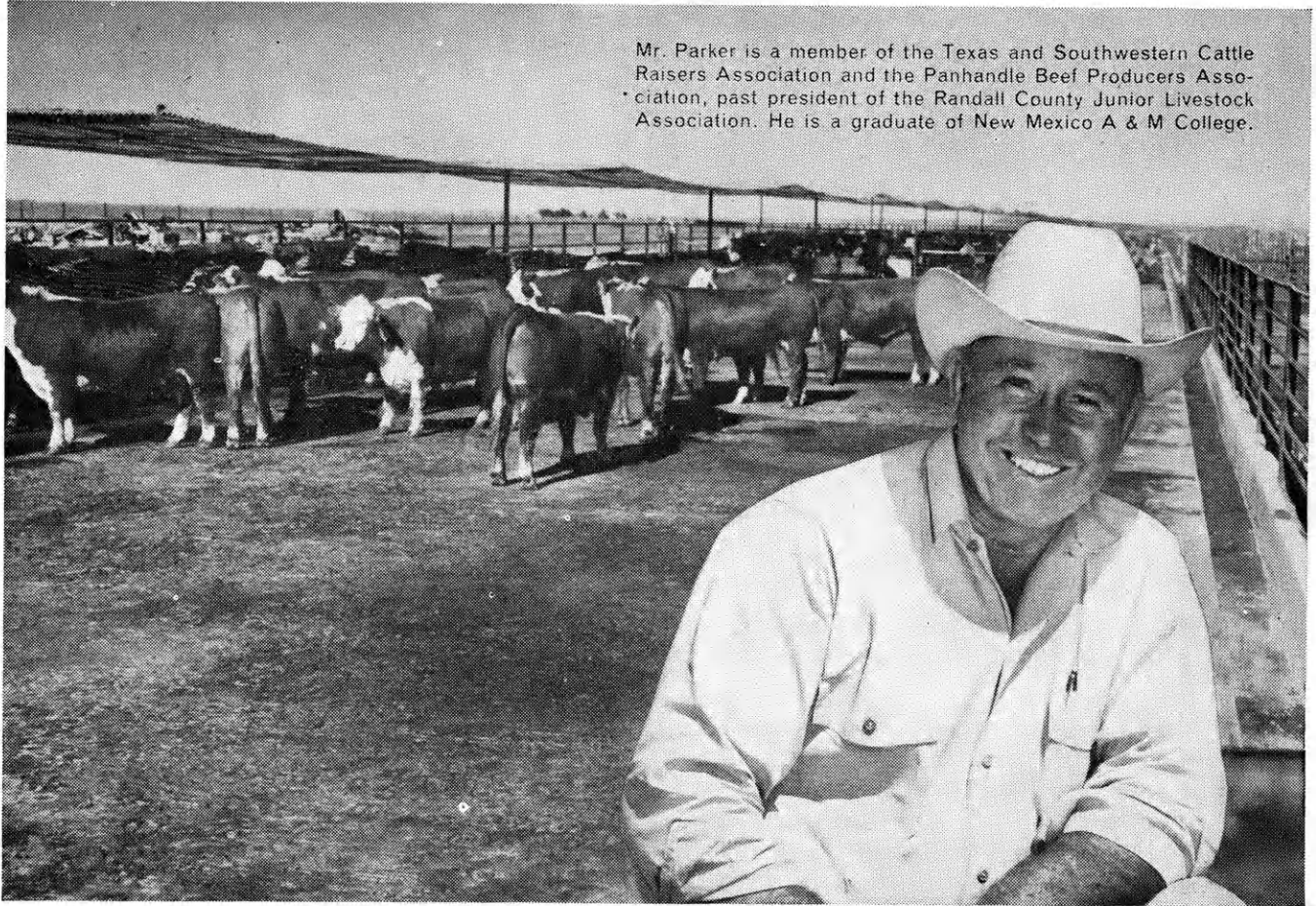
FACULTY ADVISER

Lowell Brandner

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Second class postage paid at Manhattan, Kansas.

Mr. Parker is a member of the Texas and Southwestern Cattle Raisers Association and the Panhandle Beef Producers Association, past president of the Randall County Junior Livestock Association. He is a graduate of New Mexico A & M College.



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that lead to a concrete sump. Manure is washed down to the sump and from there is pumped as a liquid directly to crops through a concrete pipeline.

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Across AG's Desk


To those of you who are reading this Ag Mag for the first time on campus here at K-State, we would like to say that we are glad you're here. We hope you like K-State and we hope you like the magazine. To those of you who are old timers around here, we are glad you're back and we hope you like the mag too.

We are changing things around a little in the fact that we will publish three issues in the fall semester and three issues in the spring semester. Also we have moved into a new office but we are still located in Waters Hall.

Last year we had a top-ranking mag in national competition, and we hope to do as good this year. A lot of our staff members are a little short on experience, but we will do our best to turn out a good magazine. I think that we'll do a good job, and all we ask is that you read the mag and let us know what you think.

If you have a suggestion or a big healthy gripe, just bring it to 211 in Waters Hall. We won't guarantee that your gripe will be reason enough to make a policy change, but we will listen and appreciate what you have to say.

Arnold Good



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Ag Industry Offers

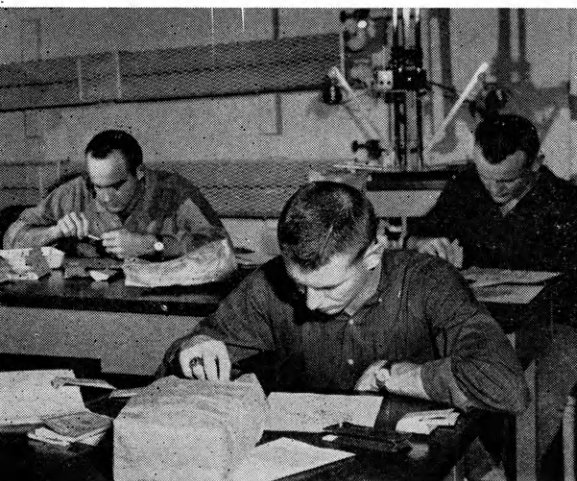
2 to 1 Odds on Your Future

by David Good

CALLING All Grads!" is the word that industry sends to all ag colleges each year. Many people think that agriculture is losing importance in our economy. What people don't realize is that agricultural jobs employ 24 million people, or more than one-third of the total working force in the U.S.

These people don't realize that today's farmers require 16 billion dollars worth of farm machinery, petroleum products, and electrical power annually. They don't realize that the agricultural industry uses more steel than the automobile industry per year. They don't know that the farm machinery inventory

It takes long hours of studying to graduate, but in the end there's a good job waiting.



is five times greater than the assets of the automobile industry. Yes, the number of farmers is declining but the number of jobs in agriculture is increasing, and agriculture is maintaining its place of importance in the nation's economy.

Eight Ag Fields Need Grads

There are eight major fields in agriculture that require people with college educations. These eight fields include research, industry, business, education, communications, conservation services, farming, and ranching. In each of these areas there are at least 500 main occupations. For instance, research includes such things as production, marketing, developing new products and by-products. If each area has 500 major occupations, this makes a total of 4,000 different job choices. The great number of possible jobs doesn't end here. For any one job there are many locations and various people to work for. This choice is yours because there is always a demand for agricultural workers any place in the United States or in foreign countries.

As the number of farmers declines, the ones who remain to till the soil become more specialized. The farmer of today must know how to fertilize his crops, use expensive complicated machinery, and most important of all, know how to manage his business efficiently. With his investment of \$27,000 per worker he can't afford

to use trial and error methods of improving production. Instead, such jobs as developing and testing new crop varieties, designing and building new machinery, and discovering ways to combat plant and animal diseases must be done for him. These fields are demanding trained college graduates, especially men with additional education trained for scientific research.

Job Openings Are Numerous

As an illustration of the need for trained men, the farm machinery industry can use about 2,000 men a year for the next few years and the farm building industry can use about 1,500 additional men. While all the agricultural colleges in the nation graduate only 150 dairy manufacturing majors each year, the industry estimates it can use 1,000 graduates for each of the next five or more years. The poultry industry has 20 jobs for every qualified applicant. This illustrates the reason for concern about the future of agriculture.

Jobs Increase with Population

There is a demand for approximately 15,000 college graduates in agriculture each year. This number represents new jobs which develop because of population growth or new developments in research and industry. The land-grant colleges graduate only 8,500 qualified students

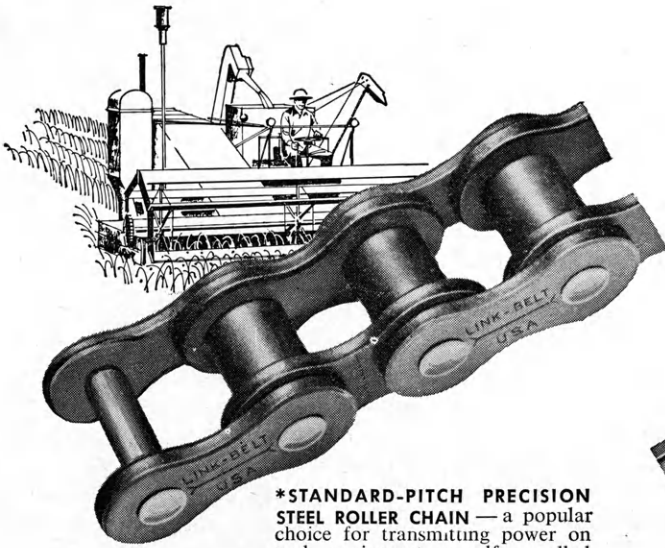
(continued on page 14)

LINK-BELT drive and conveyor chains travel with the leaders

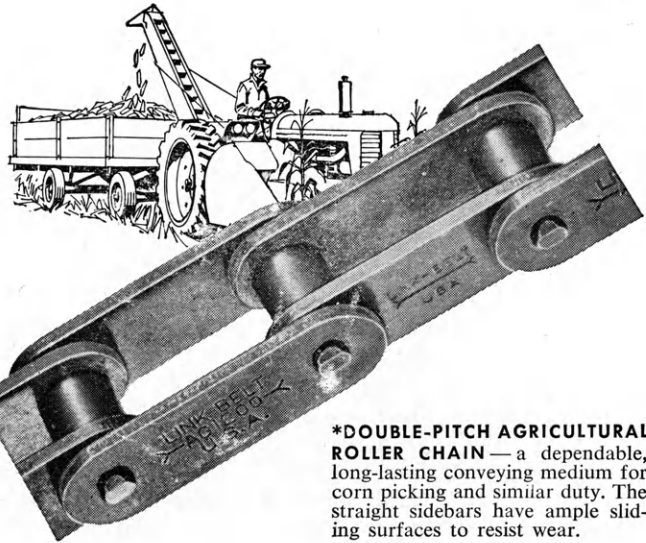
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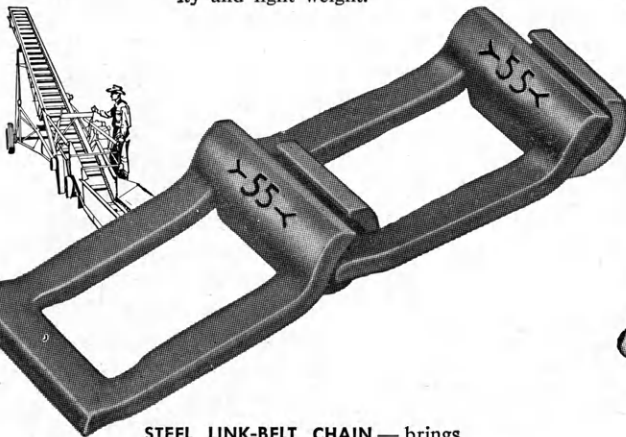
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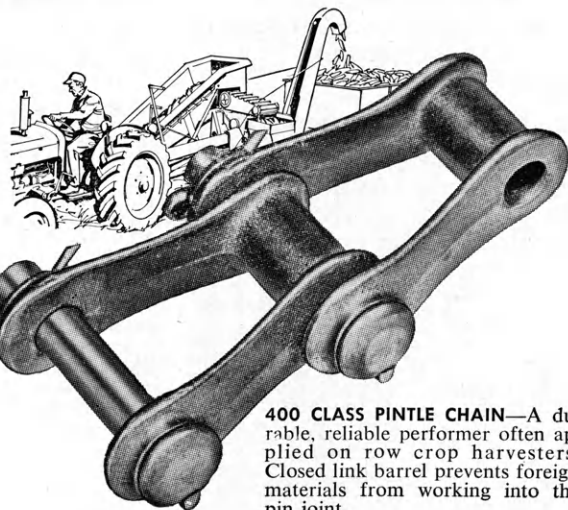
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For a Different Party

Trick or Treat

Your Guests

by Susan Schutz

SOON the sounds of souls moaning in agony will fill the night air, and the careful observer will see scraggly witches speeding past the full moon on their magic broomsticks. No longer will the dead stay that way, for their time of the year will come, the eve when spirits walk the earth—the eve when goblins and ghouls haunt unwary night travelers—the eve called Halloween.

On this night, the last night in October, the ancient Druids believed that Saman, lord of death, called together wicked souls that during the past 12 months had been condemned to inhabit bodies of animals. This eve

preceded the autumn festival of the Druids when bonfires were lighted in honor of the sun-god in thanks for harvest.

Many centuries after this custom began, the Christian Church originated the All-Saints Day festival celebrating the date (November 1, 608) when the Pantheon at Rome was consecrated as the Church of the Blessed Virgin Mary and All-Martyrs. The date of All-Saints Day was set probably because the Druid celebration was on October 31, and it was Church policy to replace heathen observances by Christian ones. In old England, All-Saints Day was called

All-Hallows Day and the evening before, All Hallow-e'en, later shortened to Halloween.

Parties Can Be Inexpensive

We still celebrate this ancient festival every October 31 with scary ghost stories and tricks-or-treats. This is the time for apple cider and doughnuts, and, for parties. A Halloween party can be a wonderful outlet for the imaginative mind. Fairly inexpensive, yet effective decorations are easy to find and can be used in any desired way. Perhaps you would like to give a party this Halloween. Why not make it a costume party; no one is too old to act a little crazy sometimes, and the result can be a lot of fun!

To be really effective, a Halloween party should be as secret and mysterious as possible. The unexpected is your goal, and you can begin with invitations made of black construction paper on which you have printed ghostly rhymes in white ink. Use imagination in sending the invitations: slip them under doors or have a younger member of the family dress as a Halloween spirit and deliver them in person.

Make Your Own Decorations

The next step is to plan decorations, and what a wealth of ideas there are! Carry out the theme of mystery and the unexpected in the rooms in which you plan to entertain.

Add atmosphere to your party, using some simple room decorations. You can make realistic looking scarecrows with broomsticks tied to floorlamps. Add old clothes. Pad with straw or moss and you'll have life-like goblins for a few minutes work and a little effort.





Halloween parties should have ghosts, and you can make one by tying a pillow to one of your ceiling fixtures. Then cover this pillow with an old sheet. A fan gives movement.



Party decorations are available in dime stores, but why not make them yourself. Put a skull and crossbones over the entrance to your home, and keep the entrance hall in darkness with the exception of a Jack-o'-lantern at the end. Grotesque Jack-o'-lanterns can be made from pumpkins, apples, squash, turnips, and even cabbages. Just cut out the features and place a lighted candle in each one. Put the lanterns in out-of-the-way places to surprise your guests and to provide a flickering half-light befitting the realm of ghouls and witches. Lanterns can also be made from boxes, with colored tissue paper over the cut-out features.

Add Life to Your Party

Hang pillows covered with sheets here and there which makes very effective ghosts. In some dark corner, place a broom handle at right angles to a floor lamp. Cover the top of the lamp with a paper bag on which you have painted grizzly features. Drape the figure in black cloth, and put some grey moss on top of the face for hair. Top with a witch's hat, turn on the lamp, and you have a very convincing witch with eerily glowing features.

A good trick to add atmosphere to the party is the use of string spider webs with fat, black spiders made of felt and pipe cleaners in the centers. Make each web and its occupant sway by using a concealed electric fan. Paint yellow features on the spiders

to make them even more horrible to your female guests. The more goose-pimple-producing decorations you have, the better the party. Hang grey paper bats from the ceiling; hang grey moss too, and use green light bulbs to make the rooms glow with a ghastly eeriness.

Use Autumn Decorations

Be liberal with typical autumn decorations. Scatter lots of colorful fall leaves and branches in the rooms. If you entertain in a recreation room, place cornstalks in the corners with pumpkins, and, perhaps, a scarecrow. You could even include a bale of hay, scattering some of it on the floor.

There are many novel scary tricks you can use. An elaborate one is to keep your entrance hall dark, and as each guest enters, blindfold him. Provide strange noises in the hall such as screams, moans, the dragging of chains, and the hooting of owls. Conceal an electric fan to blast each guest with cold air, and tickle your guests' faces with a feather duster when they reach the end of the hall. When they reach this point, have them kneel and tell them they are in the presence of the Halloween witch. Remove their blindfolds and they will be greeted by two enormous, luminous eyes glaring out of the darkness. The eyes are simply egg shells lighted by tiny flashlights.

Another good idea is to designate a room as the Witches' Den. Have someone dressed as a witch mutter

incantations over a caldron filled with a little dry ice for a smoky effect. As the witch removes a piece of paper from her robe for each guest, have her pass the paper three times over a candle flame, and fortunes will mysteriously appear. To make this work, write the fortunes in lemon juice on plain paper before the party begins. The heat of the candle flame will make the writing appear.

Make a closet into a grizzly Blue-beard's Den. Ask some girl friends to pose as the murdered wives. Drape them to their chins in red-stained bed sheets, and powder their faces colorless. Tie ropes around their necks and nail the rope ends to the wall to give the illusion that the heads are hanging there. Burn alcohol and salt in a dish to dimly light a scene that is guaranteed to produce screams!

If you plan a dinner party, have someone dressed as a ghost greet each guest as he enters by extending a hand covered with wet salt. Keep your guests in darkness until the meal is served. Then light the room with orange-colored candles on a tablecloth of black cheesecloth or paper. Arrange goldenrod, yellow chrysanthemums, and strings of cranberries around a fat pumpkin as a centerpiece. To perk the pumpkin up, cut zigzag edges around the top and place chocolate mice in the notches or scampering down the sides of the pumpkin.

Marshmallows Hold Placecards

Any Halloween characters, from brownies to black cats, would be fine for placecards. If you want party favors, try putting marshmallows on stick ends of lollypops. Use chocolate icing for facial features on the marshmallows and drape the figures in white crepe paper. Use white pipe cleaners for arms and bend them so that the little figures can hold placecards.

A suggestion for your Halloween dinner:

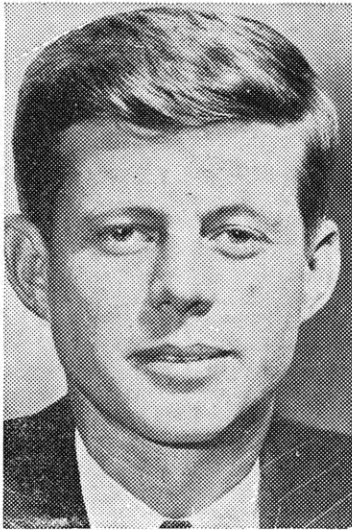
Shrimp a la King
Latticed Potatoes
Tomato and Cream Cheese Salad
Halloween Cake
Coffee

The cake is devil's food with white icing. Mark the cake off into 12 sections, numbering each of the hours until the witching hour of midnight. Put small objects, wrapped in oil

(continued on page 14)

Compare the Platform

Consider the



Senator Kennedy, Democrat, is promising the farm vote 90% of parity if he is elected. To help make this possible he is proposing unit controls instead of acreage allotments. In connection with this, the Democrats are also offering a Food Stamp Program to help feed the low income families in the United States.

By Norman Werner

IT'S GOING to be Nixon versus Kennedy in the November election, with the farmer assisting in the knock-out. Throughout the country the farmer is carefully watching what each political party has to offer. At the same time both the Democratic and the Republican parties are looking to the farmer for his vote to help sew up the November election.

Why is so much emphasis placed on the farmer? Farming is the biggest single industry in the U.S. and probably the most dissatisfied. The farmer is sitting right on the fence and he's ready to cast his vote for

the man and the party that he thinks will preserve world peace and give him a fair deal.

Taken as a whole, farmers produce more, sell more, buy more, and create more jobs than any other single industry in the U.S. As a whole, the output and labor force of the farming industry is far greater than that of the automobile or steel industry. However, the farming industry is made up of millions of owner-operated businesses all of which are in competition with each other, and each having practically no control over the prices they receive at the marketplace.

It's absurd to think of a farmer trying to raise the market price of the products he has produced. If he tries, other farmers are ready to undersell him. Consequently, to increase his income the farmer has had to produce more. But in the past, by producing more the farmer has run into surpluses, lower prices received, and government controls.

Farmers Can't Control Prices

Just think for a minute of the millions of farmers competing in this fashion and compare them to Walter Reuther, for example, who controls the United Auto Workers and has the power to influence wage levels, regulate hourly production, and thereby influence the price of a new car. The result is evident. The farmer pays for the things he needs at

the same prices that everybody else does, but doesn't have any say as to how much he should receive for the products he produces in order to make a level of living equal to that of the industrial laborer. Consequently the average farmer is earning considerably less than the average factory and white-collar worker.

Since many farmers depend on governmental control for a fair living at the present, they're watching both political parties and the November election pretty closely. Both parties know this, so they are emphasizing the farm problem in their campaign speeches.

Farm Platforms Differ

The big difference between the Democratic and Republican farm planks seems to boil down to this: The Democrats want strict governmental controls, with the farmer receiving 90% of parity or better. The Republicans are rejecting strict governmental controls but want to speed up adjustments in output through acreage allotments and a better Conservation Reserve.

In advocating strict governmental controls the Democrats say, "Let's raise the farmer's income level to that of nonfarm people by guaranteeing him at least 90% of parity." To do this it seems logical that the Democrats will place into effect unit controls and the plan, or a plan similar to the one that was proposed by

rms

Differences

Cast Your Ballot

Charles F. Brannan back in 1949.

A program of this type would work something like this—production quotas would be assigned to individual farmers in units of the crop involved. Instead of being allotted so many acres of wheat, corn, or cotton the farmer would be able to sell just so many bushels of wheat or corn, and just so many bales of cotton.

When the farmer takes these allotted products to the marketplace, the prices of these products would be permitted to find their own price level. If for some reason they should sink below a "fair price" determined by the government, dropping the farmer below 90% of parity, the farmer would then be given a production payment from the U.S. Treasury. This would make up the difference between the open market price and the "fair price" guaranteed by the government.

Democrats Offer Food Stamp Plan

Along with full parity income, the Democrats are advocating a food stamp program to help feed low-income families, increase consumption of surplus products here and abroad, set up a managed reserve of surplus items stored in the U.S. in case of a national emergency, and increase technical research to find new uses for surplus items.

On the other hand, however, the Republicans favor the previously used acreage allotments, and are fea-

turing a bigger and better Conservation Reserve program with "payments in kind."

Under the Conservation Reserve program farmers are paid from the U.S. Treasury to take their land out of production. The main purposes are to cut production, gradually remove governmental controls, and return to the forces of supply and demand operating in the open market.

GOP Favors Less Production

The Republicans believe that if the Conservation Reserve is big enough and if its rules are tightly enforced it can be effective in controlling production. If the Republicans win in November the Conservation Reserve more than likely will double the amount of acres now under conservation practices.

In connection with the Conservation Reserve and mandatory acreage allotments, farmers are likely to get "payments in kind." This means that farmers will be paid out of government surpluses for taking land out of production. A wheat farmer for example would get so many bushels of wheat for each acre he retires from production. The idea is to use up surpluses of crops on hand, not so much to save money for the government.

Along with the Conservation Reserve the Republicans are featuring a Food for Peace plan. This plan will use surplus farm products as a form



Nixon, Republican, offers to ease the farm problem by speeding up adjustments in excess farm output through acreage allotments and a bigger, more efficient Conservation Reserve. Along with this the Republicans want to feature a Food for Peace Plan. This permits surplus products to be used as foreign currency.

of foreign aid through give-aways and sales for foreign currency.

The Republicans, like the Democrats, want to step up disposal of surpluses at home and abroad, set up a strategic food reserve for national emergencies, and launch an intensified research program to find new uses for farm products.

The farmer wants some action on his problem. In reviewing what Nixon and Kennedy have said, it appears that both parties have been giving a considerable amount of thought to the farmer. Both men want to help him but it will be up to the farmer to decide for himself which party will do the best job.

Urea

Will It Substitute for Protein?

By Don Haber

ALTHOUGH varied in use from the manufacture of plastics to commercial fertilizer, urea has become one of the most important substances in the feeding of farm animals today. Research and new developments have given the farmer a source of non-protein nitrogen in livestock rations.

Urea is normally thought of as the end product of the metabolism of nitrogen-containing foods (protein) which is excreted in the urine of animals. Although synthesized as early as 1828 by a German chemist, Friedrich Wohler, urea did not find much use in this country until after World War I, and has gained general use only since World War II.

Dr. D. Richardson, professor of animal husbandry at Kansas State university, points out that urea should be used when the ration is low in protein and when a readily available source of energy is present, such as a fattening ration.

Ruminants Utilize Urea

The utilization of urea in livestock rations should be limited to ruminants (animals such as cattle, sheep, and goats with four-compartment stomachs). It has specifically shown best results in the fattening rations of beef cattle. Older cattle make more efficient use of urea than calves, and both beef and dairy cattle use it much more efficiently than sheep and goats.

Just how do ruminants use urea? The answer lies in the rumen, a sort of "fermentation vat" in the rumi-

nant in which millions of tiny bacteria combine nitrogen from urea with other nutrients to manufacture protein for their own bodies. As these bacteria are digested in the true stomach, and small intestine, the protein is made available to the animal.

Thorough Mixing Is Essential

Uniform mixing of the feed is as important as the amount fed. Rations containing urea should be thoroughly mixed to insure that no animal receives a harmful amount, as too much urea may be toxic to the animal. This is thought to be the result of formation of ammonium hydroxide which causes the bloodstream to become basic, causing toxicity.

Urea as used in dairy cattle rations and laboratory tests has shown that up to one-third of the cow's total protein supplement can be safely supplied by urea. However, urea is somewhat unpalatable and consumption is best when it's fed at a low concentration level. Molasses can be fed to mask the flavor of urea in the ration. Tests of dairy cows fed urea indicate that neither milk yields nor milk flavor are significantly affected by feeding urea.

"Most farmers still prefer natural protein feeds to urea and other non-protein nitrogen, and results are slightly better with natural protein feeds in the ration," said Doctor Richardson. "However, in a case where a natural protein feed is scarce,

Using urea is a cheap way to provide a protein equivalent in a feed ration. By thoroughly mixing urea in the ration, it is easy to feed.



urea can be utilized as a partial replacement."

"Several rules are commonly accepted as guides for feeding urea," explained Doctor Richardson. These rules are:

1. Urea should not exceed more than one-third of the total protein fed.

2. Urea should never make up more than 1% of the total ration.

3. Urea should not be more than 3% of the total concentrate of the ration.

4. Urea should not be more than 10% of all the protein supplement fed.

These rules all work out to approximately the same amount according to the size of the ration, and any one of them can be used at the choice of the feeder.

"We need to emphasize the fact that urea can't be fed to non-ruminants, as they do not have the digestive facilities to handle it and harmful effects will result," declared Doctor Richardson.

How great the use of urea will become in animal feeding remains to be seen.

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"Ten Years of Dependable Service"
Department of Dairy Husbandry Kansas State University
VISITORS ALWAYS WELCOME

2 to 1 Odds

(continued from page 6)

per year. This is about two jobs or futures per graduate.

When people say we don't need as many people in agriculture today as we did 30 years ago, we can prove to them that the industry is desperate for people to fill vacancies in the various agricultural fields. We can say the future has never been brighter. Of course the number of farmers is decreasing but the field of agriculture is expanding, thus creating many new jobs.

A person can still be working in the general field of agriculture if he chooses one of the occupations cited above. Where else can he find more opportunity, more challenge, and more possibility of success than in an agricultural occupation? With two job possibilities for every person, the future should be a challenge to anyone interested in agriculture.

The trend is toward more education, more research, and more specialization. In the face of this, if you strive to educate yourself you can look to a bright future in agriculture.



Treat Your Guests

(continued from page 9)

paper, in each piece of cake. The objects represent fortunes. For instance, a wedding ring, marriage; a penny, riches; or a shoe, travel. Top the cake with a paper witch on a broomstick and place your Halloween dessert on a plate edged with orange frilled paper. Alternate black cats and pumpkins around the plate, using them for candle holders.

End Evening with Games

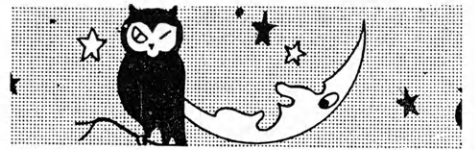
After dinner would be a good time to begin a few of the many traditional Halloween games such as bobbing for apples or jumping over the candle. This game requires that a girl jump over a candle; and if she extinguishes it, she won't marry within the year. The old favorites can be supplemented with those found in game and party books which are available in libraries. Riddle games with Halloween themes are fun, especially for children. Most of the Halloween games deal with fortune, fate, and love. A game in which everyone can participate involves threading wet pumpkin seeds. The guests, divided into two teams, see which team can thread their seeds first. It isn't as easy as it sounds!

To provide a grizzly end to a successful scary Halloween party, why not try this: Tell your guests that the hacked body of a man has been found in your front yard. In order to help the police discover his identity, pieces of him will be passed around in separate bags. However, because of the horrible appearance of his remains, everyone will be blindfolded and no one is to make any comment on the parts as they are passed around.

Ask each guest to jot down what part he thinks is in each bag. After all the guests have been blindfolded,

start passing the bags, each one containing a part of the unfortunate man. You, however, provide parts that are very convincing and easy to represent. Use chilled macaroni as arteries; two peeled grapes, eyes; a large fig, an ear; a piece of peeled potato cut in the shape of a big toe, a big toe; six to eight spools connected by wire, backbone section; false mustache, a mustache; a damp glove filled with sand, a hand; 12 kernels of dried corn, teeth; a chicken drumstick, hand bone; and a piece of shell as a finger nail.

After all the "parts" have been around, ask your guests to read their guesses of what each part was. This should provide an amusing end to an evening of Halloween fun and scare.



Wife: "You know, I suspect my husband of having a love affair with his stenographer."

Maid: "I don't believe it. You're only saying that to make me jealous."

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Follow Your Fancy

in Home Decoration

By Mary Jo Mauler

WITH JUST a little imagination you can give almost any room a lot of sparkle.

The thing to keep in mind is don't be TIMID. If there is a new color that you think you would like to try in your home, go ahead and use it, providing it blends in. You will probably be well pleased with the sparkling results.

Don't be afraid to put some unusual or unfamiliar objects in your home. Some of the most unique decorations in homes today result from the use of an antique such as a copper casserole as a flower pot.

Some of the oldest antiques polished to perfection or even given a coat of paint can add lots of sparkle to your room.

And that goes for furniture too. Many new and remodeled homes are using several pieces of old furniture right in with the modern. An old chair or two painted to either blend in or give a distinct accent will look good in just about any room.

Accent with Brighter Colors

Speaking of color, more and brighter colors are now being used as accents in homes. If the accent is exceptionally bright, use it in a small amount and put it next to, or against a neutral background so the full effect can be gained.

It isn't hard to change the color scheme in a room, if you use small accents. You can change the entire

scheme, just by adding a new accent. Another simple way to change the color scheme is to change the color of the accents you already have.

Color is no longer limited to only small accents, but is also being used freely in large areas such as furniture. Many homes feature cabinets and chests in every color ranging from vivid yellow and bright shocking reds to pale pastels.

In any case, a varying color scheme is used. In situations like this, one color is used for the walls and floors as well as furnishings, but in the various shades and hues of the color ranging from very bright to very

dark. Such color schemes are very common in bathrooms and kitchens.

In many houses, the color of the wood is used as the accent tone. This is especially true in homes with pale walls, floor coverings, and couches. In a room such as this a wooden-top table, wooden legs and frames on furniture are all the accents you need.

A great deal of wood paneling is being used in our homes today. Almost all of it is finished so that the real beauty of the wood is shown off.

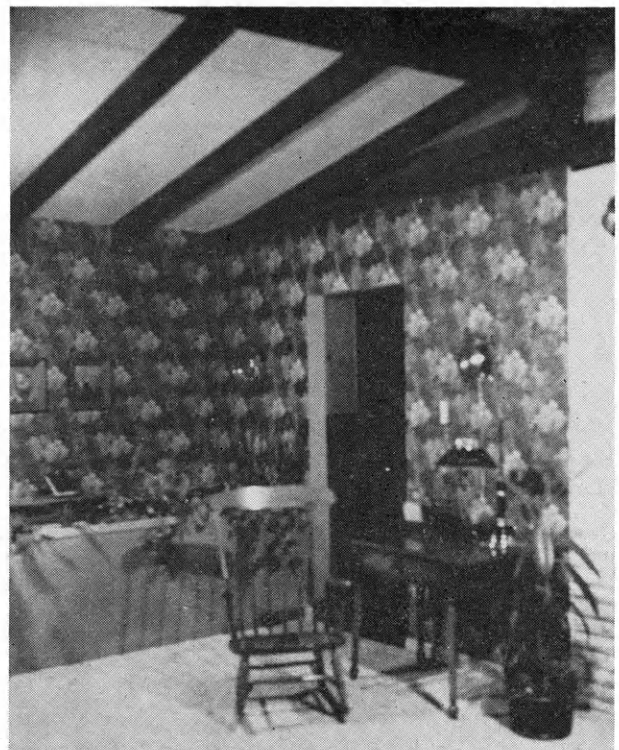
To help carry out the wood paneling theme in kitchens, a great many of the cupboards are now being made of wood as opposed to steel. Most of the counter tops are in a color to blend or make a distinct accent.

Still another way in which the beauty of wood is being expressed is in the beam ceilings so popular today.

To move the outdoors inside, we continue to find entire glass walls or sliding glass doors. If you can't afford this, just include some large windows or a grouping of windows in your home.

To go along with the use of antiques, more and more people are choosing colonial style furniture when they buy new pieces. This furniture is being used in every room of the house and will fit into about every color scheme.

Imagination and personal taste are needed to plan a decorating scheme. In this living room we have a natural colored beamed ceiling with a setting of Early American furniture. Notice also the accented subtle color combination.



This 4-wheel-drive Monster Plows a 4-yard Path

By Arnold Good

PRODUCTIVITY per man hour of the American farmer has grown considerably in the last 30 years, and one of the causes of this growth has been the development of bigger and better farm tractors. With bigger tractors and implements, the farmer does more work in less time.

The most common farm tractors of 30 years ago were in the two-plow range, and were fairly slow. Now, a tractor of the same size is in the four-plow range, and is capable of field speeds up to about five miles an hour. Also it is capable of lifting its imple-

ments and traveling on the road at about 20 miles an hour.

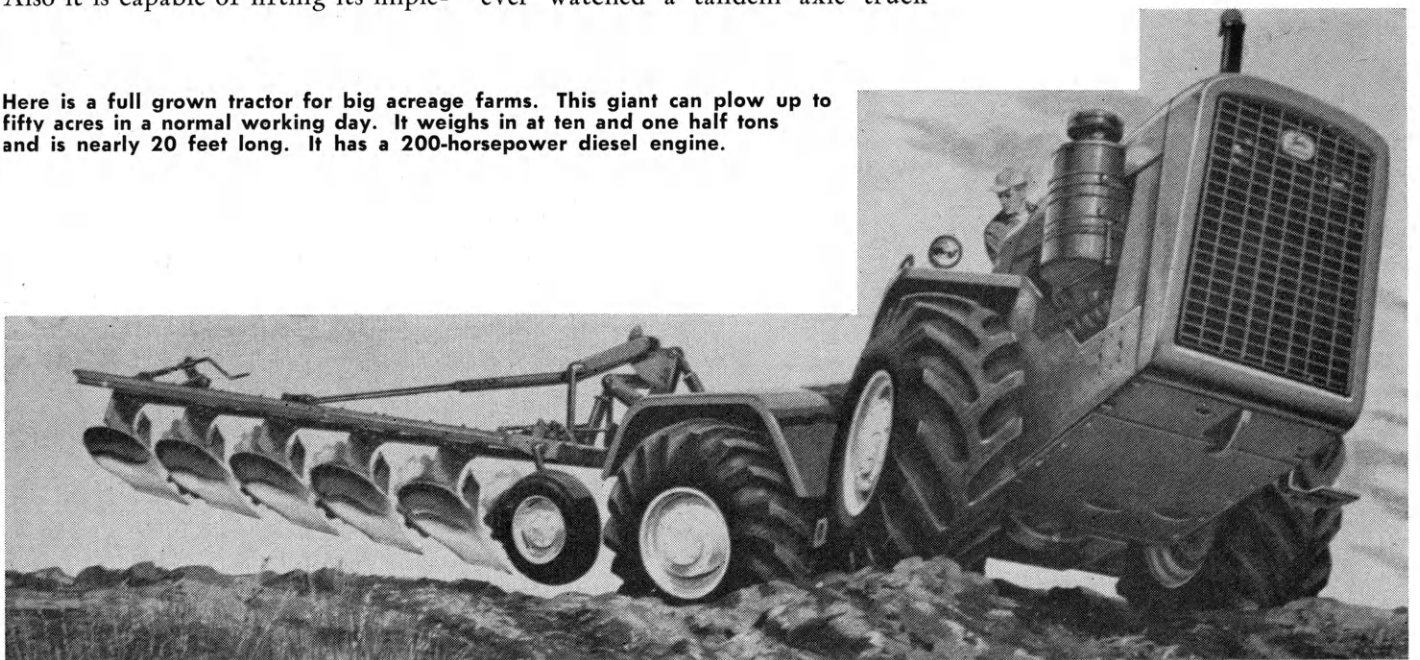
Horsepower ranges of the conventional farm tractor are crowding the 100 mark now, and Ag Engineers say this is about as far as they can go with only two driving wheels to transmit power. Some of the bigger tractors mount 16- and 18-inch-wide tires and still cannot get the desired amount of traction. The next logical step is to add more driving wheels. There are several ways to do this: you can add more wheels or you can simply add power to the front wheels.

The idea of adding more wheels has not been popular. If you have ever watched a tandem axle truck

on rough ground you can see why. The driving wheels must be built so that they can move and twist in relation to the frame on which they are mounted. If they can't, the one that loses contact with the ground immediately spins and the power of that axle is lost. Also if you have ever seen the same truck turn you noticed that one or both of the wheels had to slide in the process of turning a corner.

The most popular approach has been to add power to the front wheels. This gives us a four-wheel-

Here is a full grown tractor for big acreage farms. This giant can plow up to fifty acres in a normal working day. It weighs in at ten and one half tons and is nearly 20 feet long. It has a 200-horsepower diesel engine.



drive tractor, and if you have ever seen a jeep in mud or sand, you know what a difference power on all wheels can make.

Converted Tractors Not Perfect

It seems that by just adding another driving axle to the already existing tractors they could be converted to a four-wheel-drive without the trouble of having to design a new tractor. This isn't as easy as it sounds. In order to work, the front and back wheels must cover the same distance in the same time. When you turn, the front wheels must go farther in the same amount of time than the back wheels. Since they can't because of their smaller size one tire or possibly two must slide or slip. This isn't any problem in soft dirt, but

can cause trouble in other places. There are means of disengaging the front axle when turning, and many of these units are now in use.

Both Wagner Company and John Deere now make four-wheel-drive tractors for agricultural use. John Deere just recently introduced theirs, but Wagner has been building them for about 10 years.

In both cases, the tractors are powered by one diesel engine and are steered by hydraulically manipulating a hinge in the middle of the tractor. Since the front and rear tires are the same size and the hinge is in the middle, the tires follow the same path and move at the same speed—there is no "scuffing" of tires.

Wagner makes tractors that range up to 200 horsepower, and John

Deere's one model develops 220 horsepower. John Deere's tractor is capable of pulling an eight-bottom plow, which is 3-point mounted. This puts these tractors in direct competition with the crawler-type tractors for large acreage use.

The large four-wheel-drive tractor has the advantage over the crawler in that it can move from place to place fairly rapidly (18-20 miles an hour). Also they can do field work at higher speeds than a crawler.

Crawlers Pull More

A crawler has the advantage in that it can work under more difficult soil conditions, but this is minimized by the fact that when it is too wet for a wheel tractor, it is usually too wet to do field work. Also, a crawler can come closer to pulling a load equal to its own weight. In some cases, this figure is equal to a load of 90% of what the tractor weighs.

Will these big tractors become popular? It appears that they probably will in some areas like the wheat-producing area of the west. They won't replace the two-wheel-drive tractor or the crawler either, but they should take over the area that is due them. Their area is the large-acreage farm that needs a tractor that can move from place to place rapidly and then do large quantities of work in a small amount of time after it arrives.

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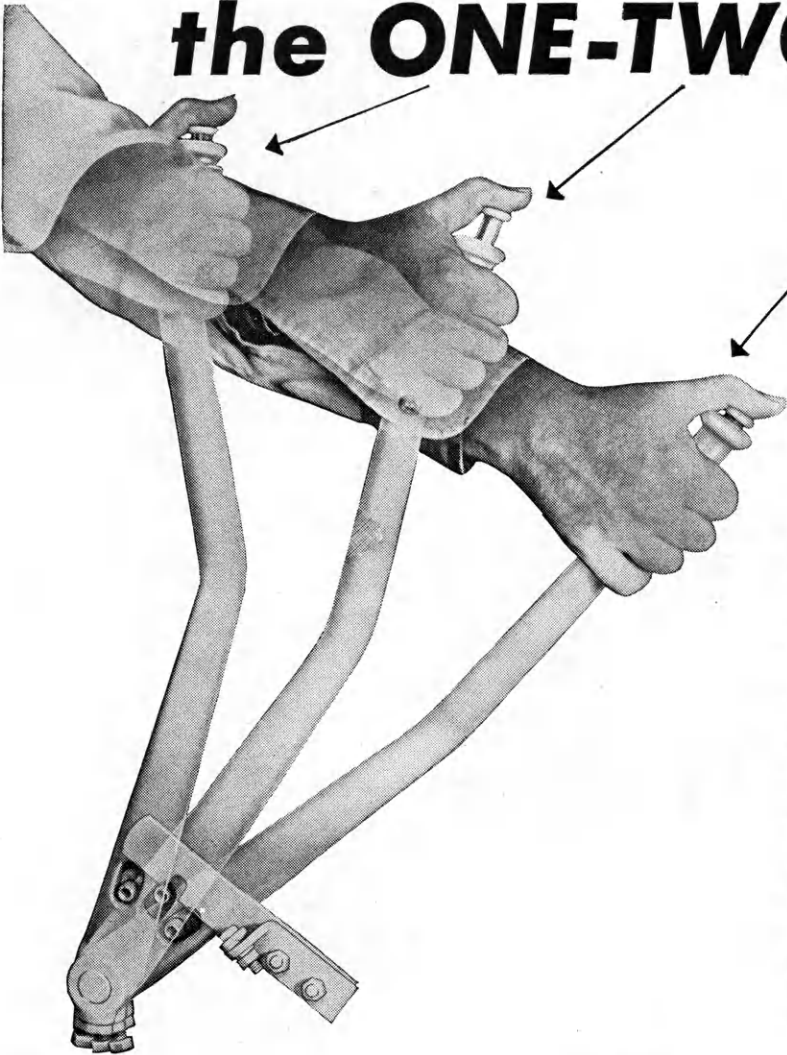
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