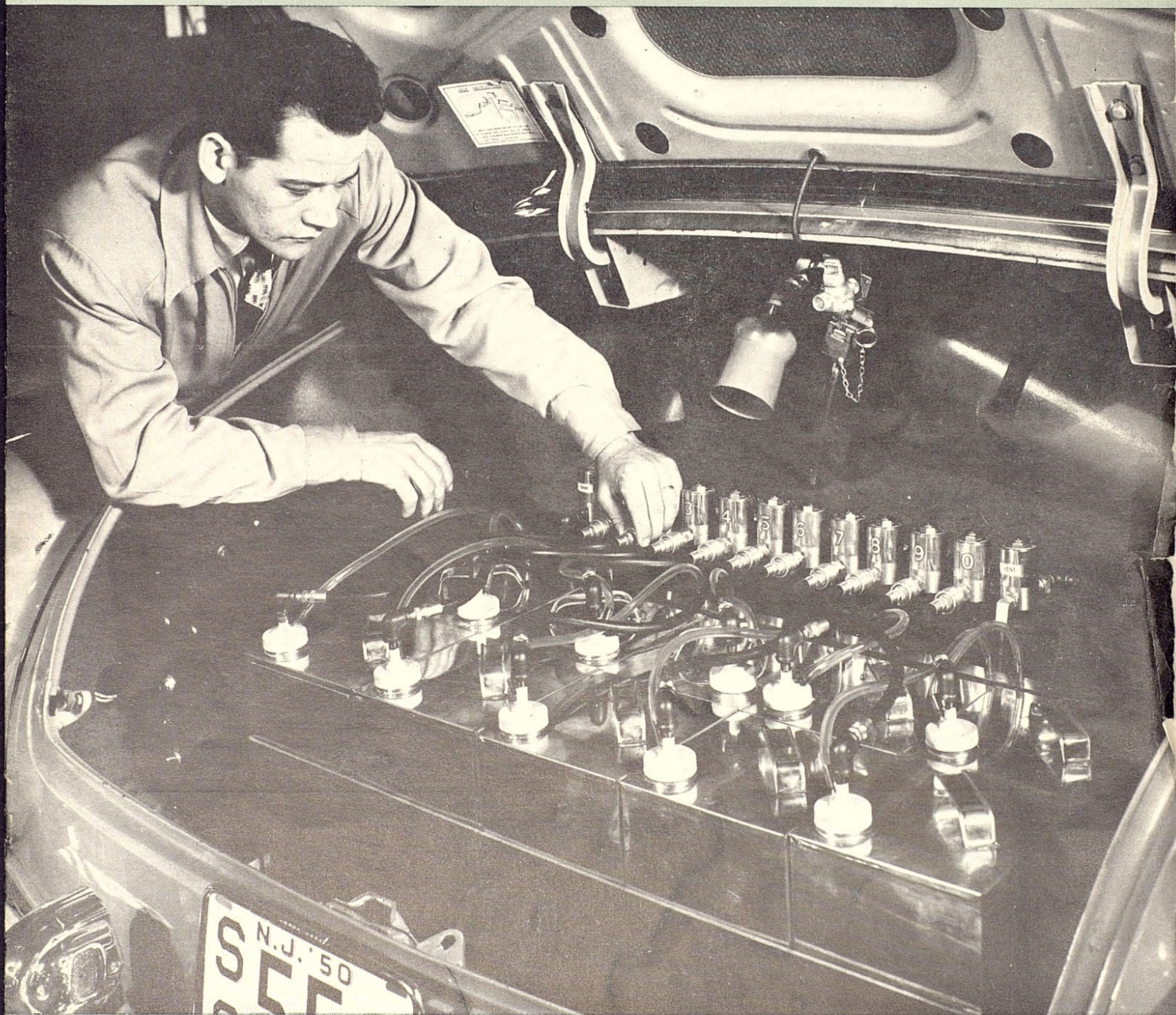


The SHAMROCK

SEPTEMBER 1950



BETTER GASOLINE FROM PETROLEUM RESEARCH
STORY ON PAGE 10

Seed Industry Is Big Business In Rocky Ford



Removing seeds from prime Rocky Ford cantaloupes.

The name, "Rocky Ford," is famous the world over. To millions throughout the nation and in many foreign countries, "Rocky Ford" means fine watermelon and superb cantaloupe.

It has been no accident that Rocky Ford, Colorado, situated on the banks of the Arkansas River, has gained international recognition for many fine strains of melons developed in its surrounding area. The story behind the story of how Rocky Ford became famous for its unique agricultural enterprise has to do more with the

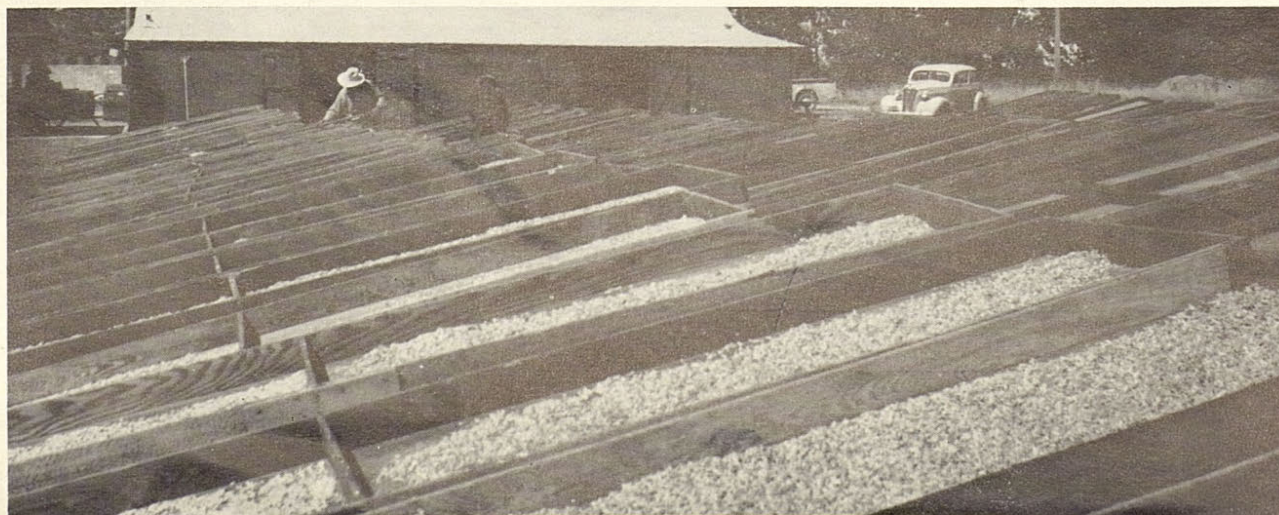
development of melon seeds than with the production of the melons themselves.

Until the late George W. Swink began raising watermelon and cantaloupe on his farm land near Rocky Ford back in 1880, the production of melons for commercial purposes had practically never been done on a large scale. Shortly after he settled in the Arkansas River Valley in 1871, Swink found that the climate and the fertile soil of the Arkansas Valley was ideally suited to the growing of vine crops—provided enough water could be

obtained by irrigation. To obtain this moisture, he and a number of his neighbors built the "Rocky Ford Ditch." Built in 1874, this was the first cooperative irrigation ditch in the valley.

After water was made available to the dry fertile soil, Swink and other farmers in the valley were able to grow large quantities of melons and other vine crops. But, like melon growers in other parts of the country, they found that none of the varieties available were suitable for shipping long distances. In 1880, after several years of careful selection of melons for seed, Swink succeeded in producing cantaloupe which met the requirements for profitable export

The dry sunny climate near Rocky Ford is ideally suited to processing melon seeds. Here the seeds are shown spread out in flat bins to dry.



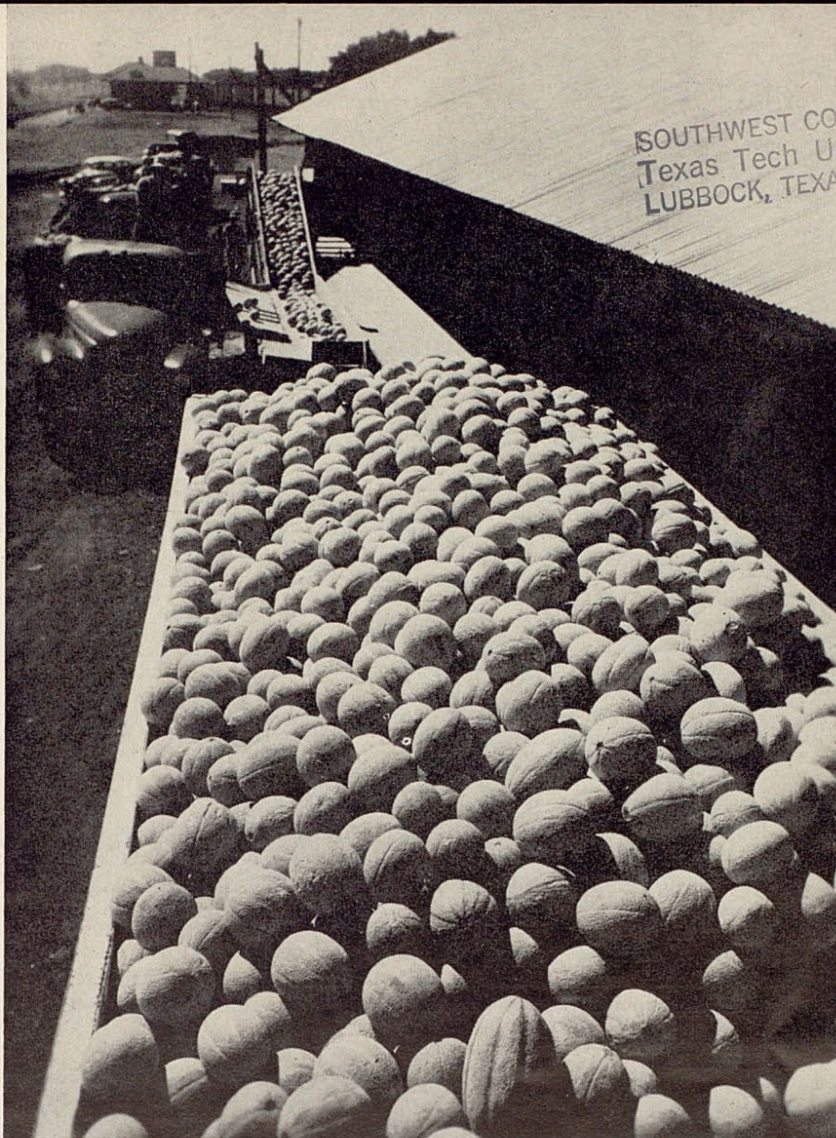
to distant markets. This melon was the forerunner of the present world famous Rocky Ford Cantaloupe.

Since that time, melon growers and seed breeders throughout the area have continued to select the prime specimens from each crop, saving the seeds from these melons for the purpose of improving present melon varieties and developing newer and better varieties. The result of this process of selection has been the development of cantaloupe and watermelon whose sweetness and flavor are famous the world over.

An early pioneer in the development of the Rocky Ford seed industry was James B. Ryan, founder of the Ryan Brothers Seed Company of Rocky Ford. Ryan started farming near Rocky Ford in 1904. When his first crop of melons failed because of mildew he came to the conclusion that the fault was in the seed he had bought. To prevent another such crop failure, he decided to learn all he could about seeds. Very soon he became so interested in developing better varieties of melon seeds that the greatest part of his agricultural activities were devoted to the production of melons for seed rather than for food.

The efforts of this early pioneer in the Rocky Ford seed industry did much toward the improvement of a number of the fine varieties of melon grown around Rocky Ford. His work is now being ably carried on by his son, Millard Ryan, who now heads the family seed business.

During the past 55 years, several other seed firms have been organized in and around Rocky Ford. These firms include R. H. James Seeds, Lawrence Robinson & Sons Seeds, Rocky Ford Cantaloupe Seed Breeders, D. V. Burrell Seed Growers, Woodside Seed Growers, H. D. Garwood Seed Company, Rice Seed Growers, Western Seed and Irrigation Company, and Ebbert Seed Company. The Rocky Ford seed business has also grown to include the production of other seeds besides watermelon and cantaloupe. Such seeds as cucumber, onion, and tomato have been produced in the Rocky Ford area for a number of years.



SOUTHWEST COLLECTION
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Long famous for the production of fine cantaloupes—such as these pictured above—Rocky Ford also produces a large part of the nation's vine seeds.

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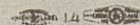
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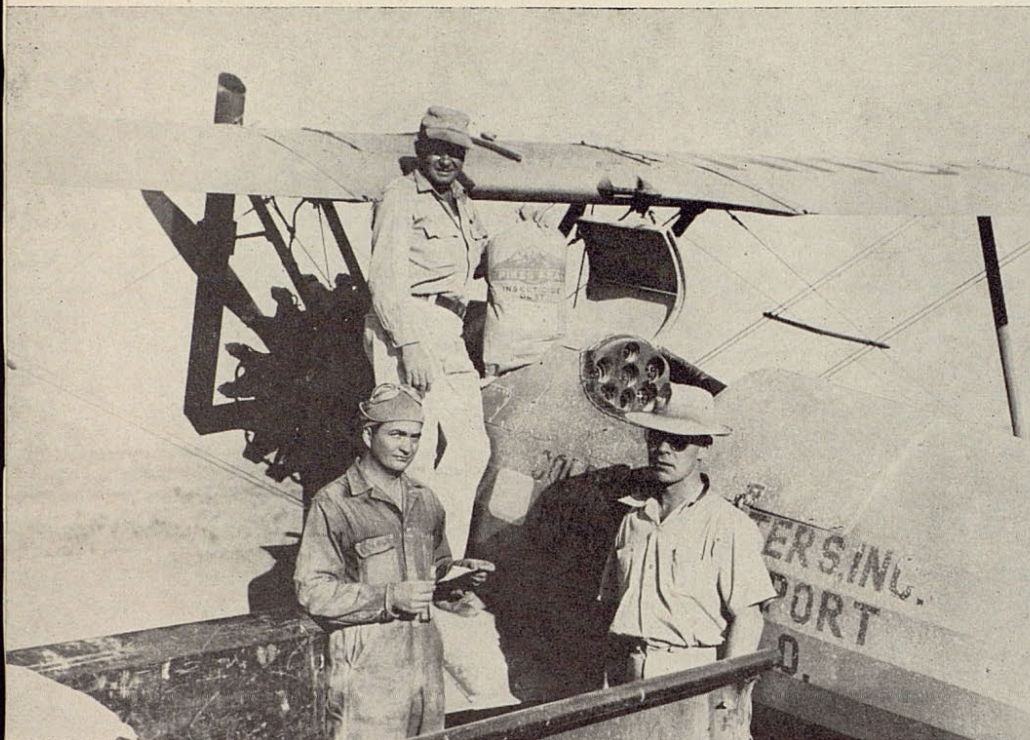


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The use of airplanes to spray insecticides on crops is a common practice among Rocky Ford farmers. The luscious-looking tomatoes pictured below are evidence of the effectiveness of their progressive farming methods.

Large quantities of zinnia seed are also grown in the area.

During the past few years, the production of field seeds—such as hybrid corn, pop corn, and alfalfa—has become an important part of the agricultural activities of the region.

An impressive sight to Rocky Ford visitors are the extensive fields of zinnias. The high, sunny climate of the Arkansas River Valley has been found well suited to the growing of this flower. D. V. Burrell Seed Growers are among the Rocky Ford seed growers who produce and market large quantities of zinnia seed. Like many of the seed firms in Rocky Ford, the Burrell Company is a family business. One of the oldest of the seed businesses in the area, the firm was organized by D. V. Burrell, Sr. more than 50 years ago. The operations of the business are now carried on by the founder's son, J. H. Burrell of Colorado Springs, and grandsons, D. V. Burrell II, Jim, Jerre, Robert and Bill, all of Rocky Ford. The Burrells operate extensive farms on which they grow all types of vine crops in addition to their production of zin-



nias. Although a portion of all of these crops is grown for the market, a large share is produced for seed. Burrells also process, package and market the seed produced on their farms.

In selecting and preparing seed for market the operators select only the best specimens of watermelon, cantaloupe or other plants. After removing seeds from the melons, usually in the field, the wet seeds are thoroughly washed and dried. They are then carefully graded and stored. When ready for market, they are packaged and shipped to every state in the nation and to many foreign countries.

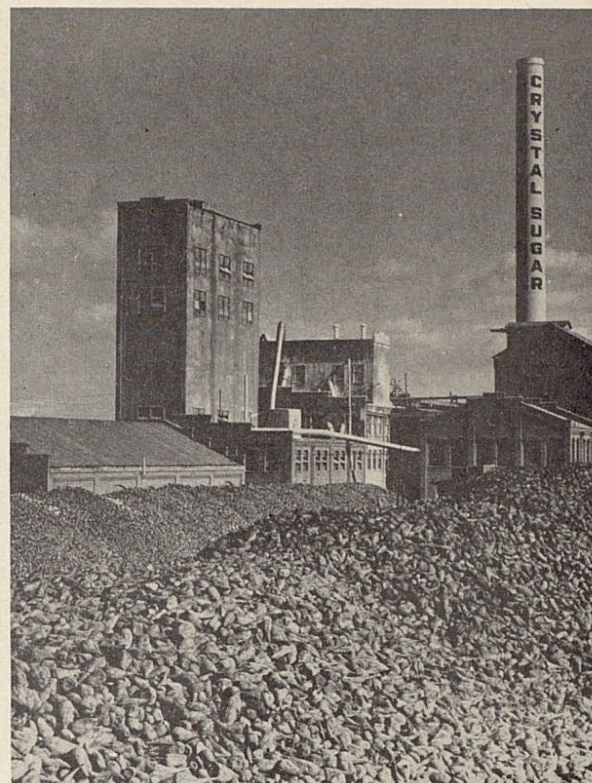
A later and rapidly growing phase of the Rocky Ford seed industry is the development of the field seed business. A leader in this phase of the industry is Bob Appleman. Appleman organized Arkansas Valley Seeds, Inc., in 1945 for the purpose of buying and processing field seeds. Since it's organization, his firm has grown rapidly. Among the seeds which the company processes and markets are, alfalfa, sweet clover, pop corn, hybrid corn, barley, wheat, oats, onions, beans, forage seeds, and lawn and pasture grasses.

The production and refining of sugar beets is an important activity in Arkansas Valley agriculture.

Most of these are produced in the Arkansas Valley, although some, particularly the grasses, are imported from other areas.

Another activity in Rocky Ford which has resulted primarily from the growth of the seed industry is the manufacture of various kinds of machinery used in the harvesting and processing of seeds. Two firms, the Clute Manufacturing Company, and the Oliver Manufacturing Company, are engaged in this industry.

Both firms manufacture several types of machines to be used for different purposes. Practically all of the machines produced by these two manufacturing firms have been developed from original designs of Francis Clute, owner of the Clute Manufacturing Company, and Oliver Steele, head of the Oliver Manufacturing Company. The products of these two companies, designed and manu-



To grow fine products such as this crop of onions (below), Rocky Ford farmers concentrate on developing and planting the best possible seed.



National Defense and the Oil Industry

(Editor's Note — The following message is an extract from a report to the Oil Industry by Frank M. Porter, President of the American Petroleum Institute. Because of the significance of this article in the light of the present conflict in the Far East, we are passing it on to our readers.)

The American Oil Industry is better prepared today than ever before to meet any national emergency. Our domestic capacity to produce and refine petroleum has increased around 25 per cent since the peak demands of World War II — during which the Armed Forces of this nation and its Allies never lacked for oil, and all essential civilian needs were met.

In the months immediately ahead, with minor dislocations to be expected, we should be able to furnish all of the military demands for oil products and supply the civilian needs for gasoline and heating oils.

Based on the assumption that the military need for oil will increase only as greater amounts of equipment and man power are engaged in using it, there should be no demand in the immediate future that the industry cannot readily supply.

As to the long range view, no one can predict with complete accuracy what the military needs for oil products may be. The extent to which we will be called upon to supply gasoline, jet and other available fuels, fuel oil, Navy special fuels, and other military requirements for petroleum, obviously depends on the turn of international events.

Although we cannot know all that is ahead, the record of the oil industry is reassuring. In the five years since the end of World War II, American oil companies have been rebuilding, improving and expanding their facilities and creating substantial reserve productive capacity.

Compared to the peak war year of 1945, total U. S. Crude oil production capacity has been increased 21 per cent, and proved crude oil reserves have been increased 24 per cent.

In these five years American

oil companies plowed back into their business more than 8 billion dollars for exploration and development and to provide these new facilities—the great bulk of this from operating profits.

This record and the traditional skill and ingenuity of the American Oil Industry, give assurance that supplies and facilities will be expanded and adapted with maximum speed and efficiency to meet whatever needs may develop, provided that necessary steel and other essential materials are made available.



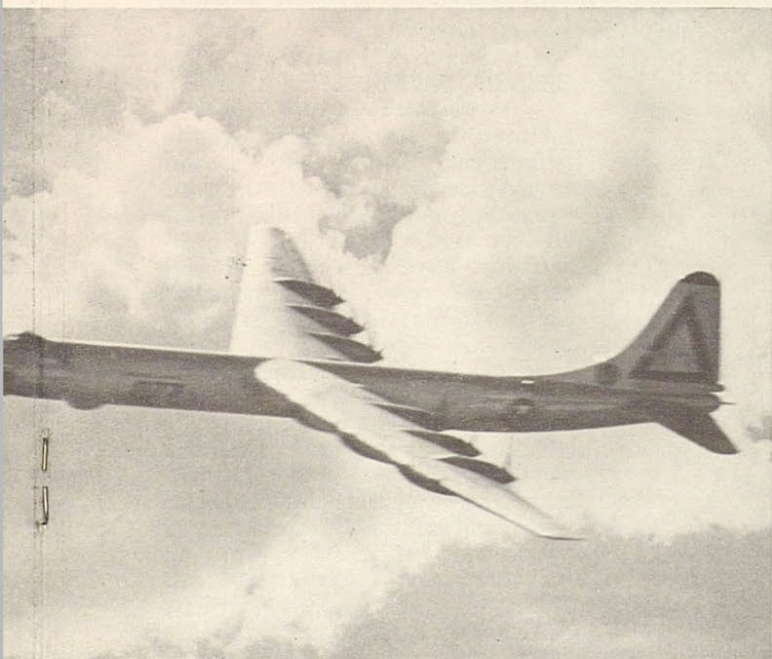
This picture shows an Air Force F-80 jet "Shooting Star" peeling out of formation at 500 m.p.h. These fast jet planes did not reach the production stage in time for World War II, but they are already being used as trainers for Aviation Cadets at Williams Air Force Base, Arizona.



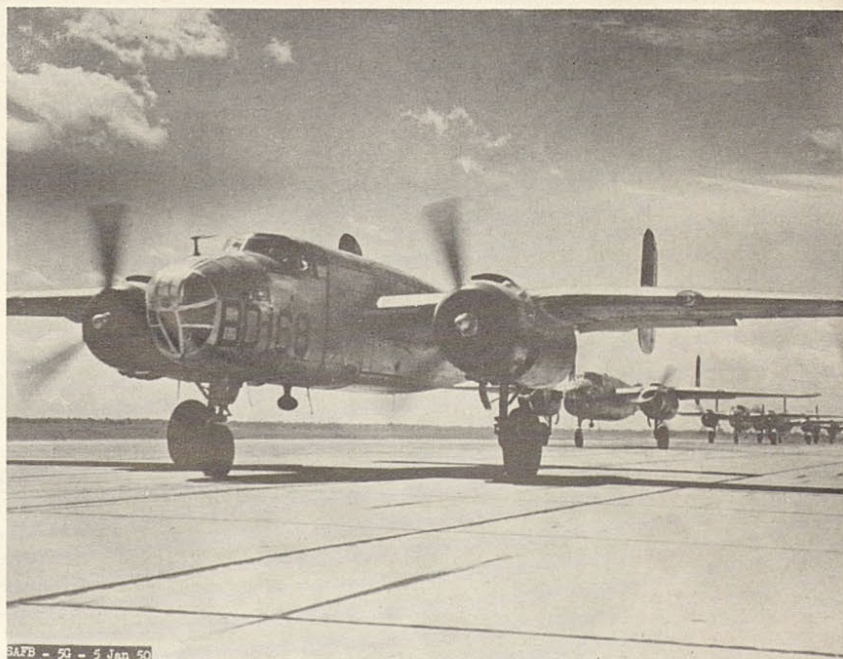
This huge A... with a flight... ate the pla... ed by an t...



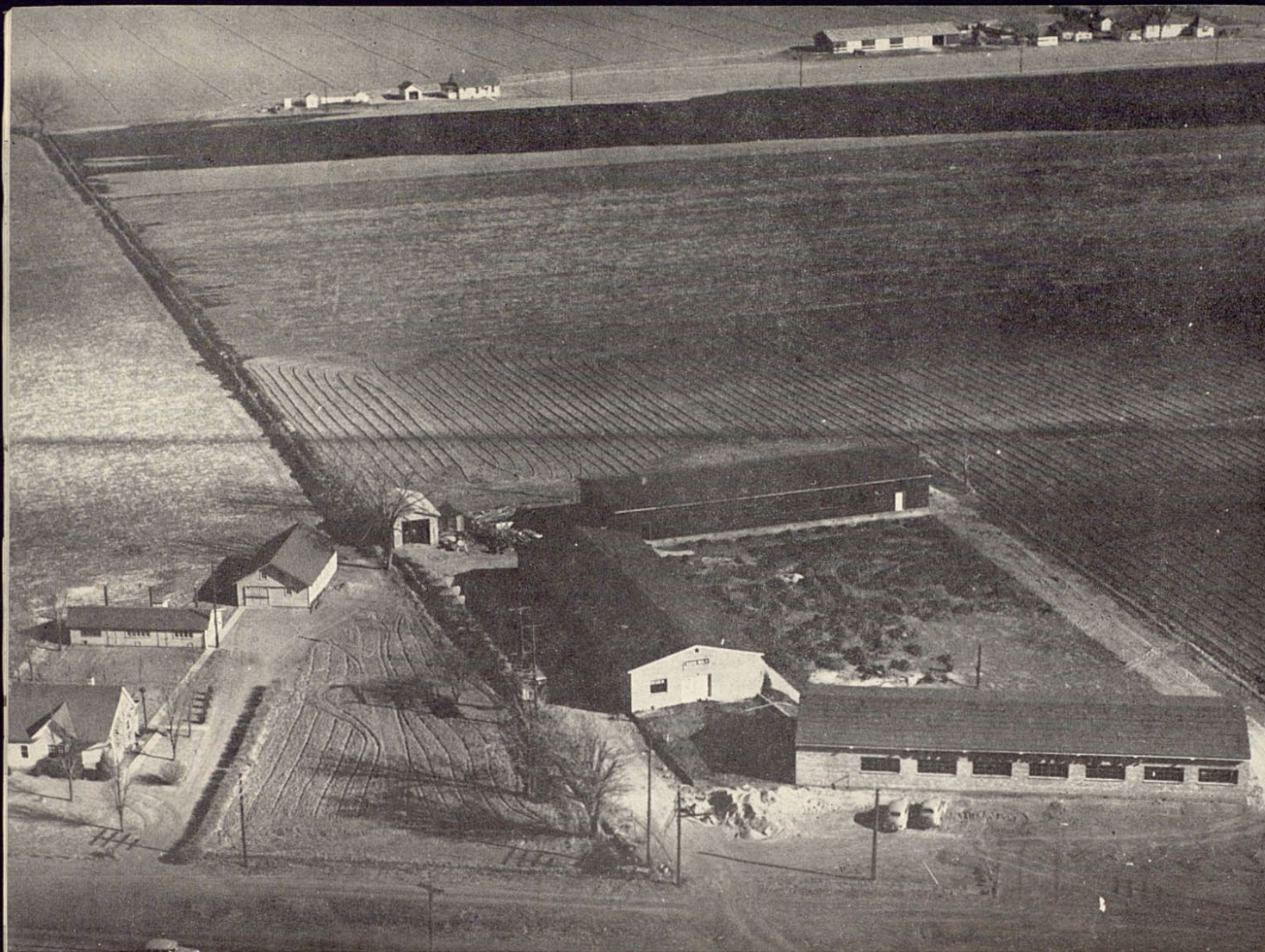
As America steps up its defense efforts, the petroleum industry must be prepared to supply fuel for planes such as these P-51 "Mustang" fighter planes.



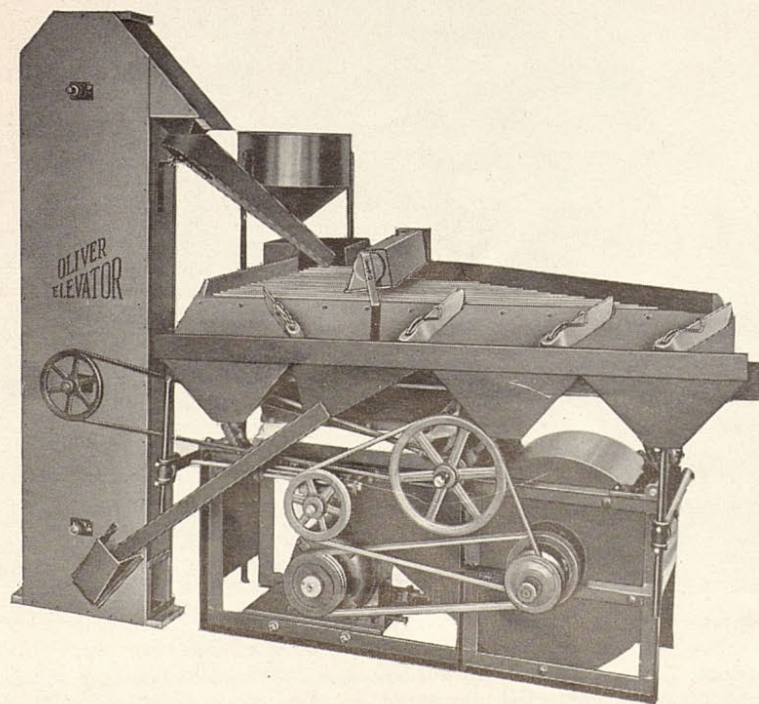
This huge Air Force B-36 is capable of speeds in excess of 330 m.p.h. in a flight range of 10,000 miles. A crew of 10 is required to operate the plane; pressurized crew compartments fore and aft are connected by an 85-foot tunnel. Fuel capacity is 21,116 gallons of gasoline.



These B-25 bombers, combat planes of World War II, are now used to train Aviation Cadets. Newer bombers such as the B-36 and the 500 m.p.h. B-45 jet bomber are rapidly replacing planes of this kind as combat-type aircraft.



Oliver Manufacturing Company, Rocky Ford, is surrounded by neat farms.



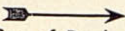
SEED INDUSTRY . . .

(Continued from Page 5)

factured in Rocky Ford, are in widespread use not only in the local trade area, but also in seed producing areas all over the world. In fact as the Rocky Ford manufacturers have perfected their designs, and have introduced new machines for still more efficient operations, the demand for their products has increased until now the largest part of their production is shipped to other areas.

Because of the enterprise and ingenuity of the farmers, seed growers, and manufacturers in the area, Rocky Ford has achieved world-wide distinction for the quality of its agricultural products. Rocky Ford melons are famous throughout the nation, and seeds from these melons have helped to

← Machinery such as this, designed and built by Oliver Manufacturing Co., Rocky Ford, is shipped all over the world.

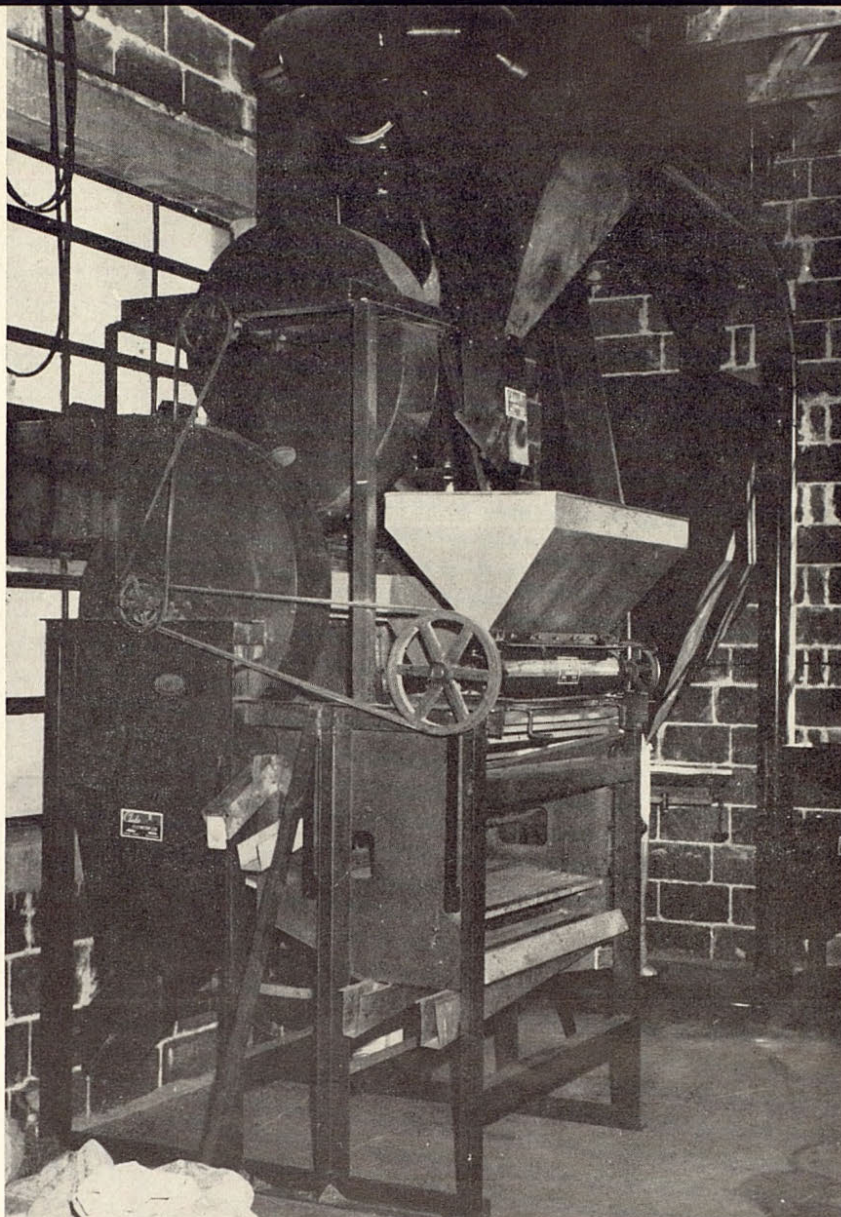
This machine, built by  the Clute Manufacturing Co. of Rocky Ford is used to clean and polish seeds.

raise the standard of quality in many other melon producing areas. As seed growers continue in their efforts to develop still better varieties of vine crops, Rocky Ford melons should become more tasty than ever in the years to come. And the development of field seed production in the Rocky Ford area promises to bring still another important activity to the progressive community.

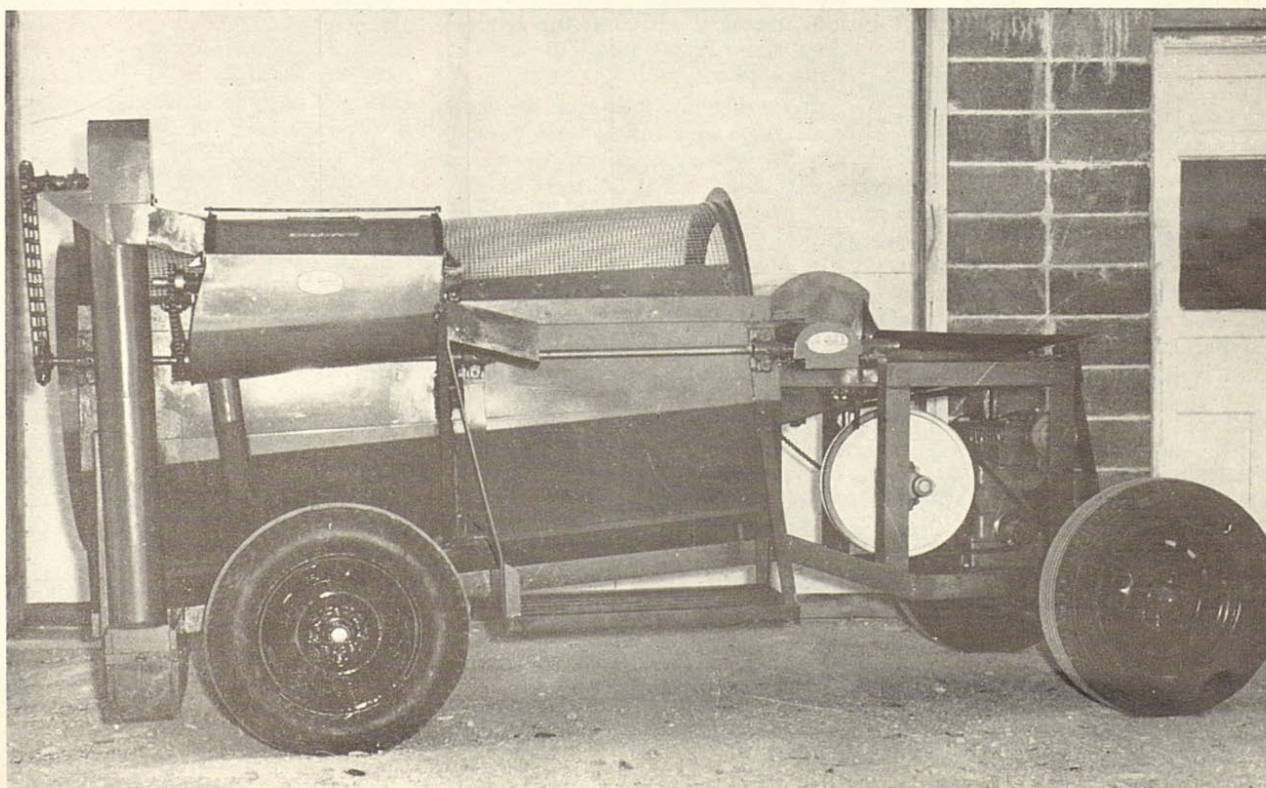
PHOTO CREDITS—Photographs illustrating the story about the Rocky Ford seed industry were supplied by Broome Bros. Photo Service, Pueblo, Colorado; V. V. Morris, M. E. Ryan, and Clute Manufacturing Co., Rocky Ford; and the Rocky Ford Chamber of Commerce.

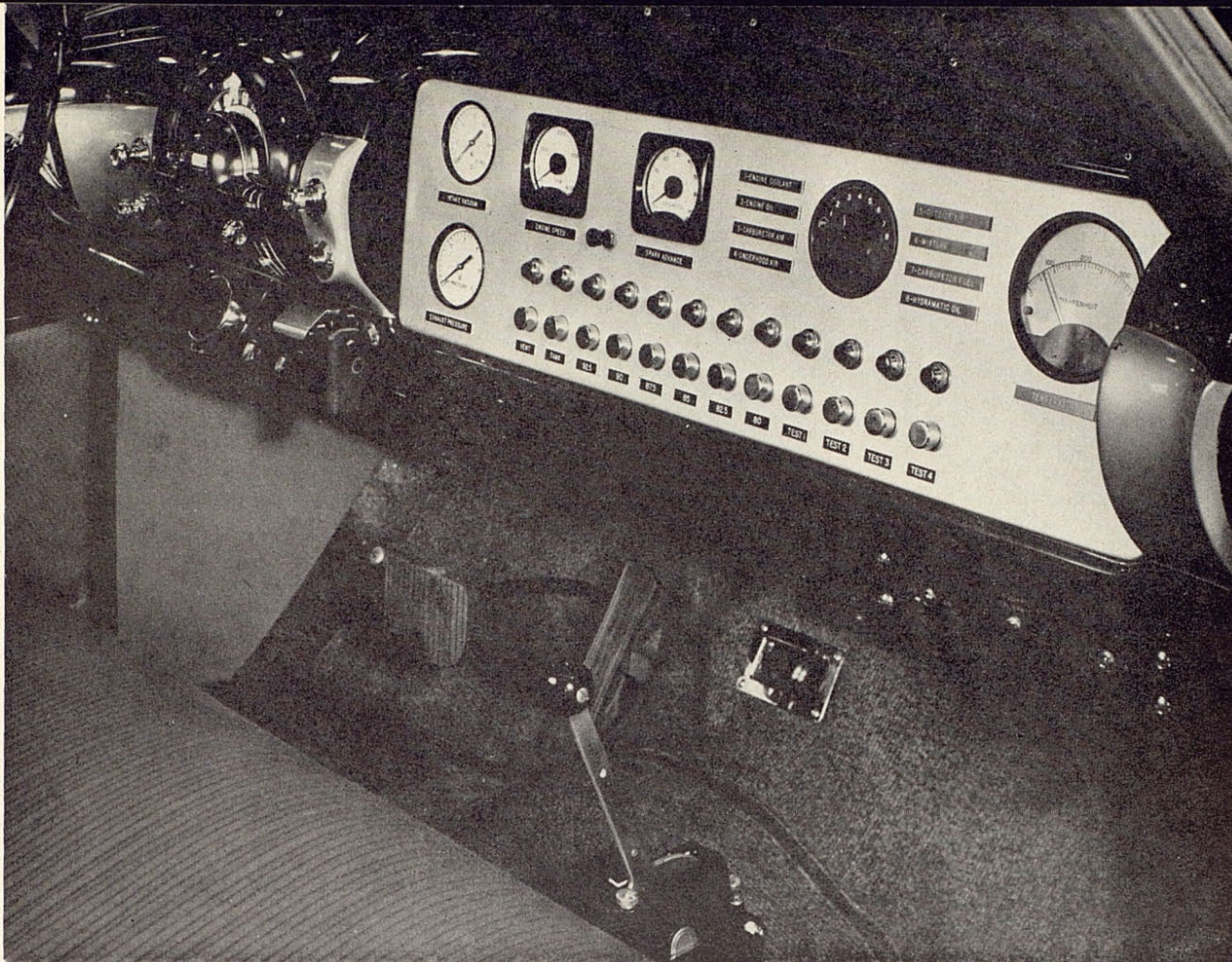
Pictures of F-51's, F-80, and B-25's are Air Force photographs. The photograph of the B-36 was supplied by Robert O. Mills of the Amarillo Gas Company, Amarillo, Texas.

Cover picture and the photograph of DuPont test car instrument panel are used through the courtesy of Willard Stewart, Inc., Wilmington, Delaware.



Mobile vine seed thresher, manufactured by the Clute Company, is shown below.





Instrument panel of DuPont test car shows complicated array of switches and dials.

Better Gasoline From Petroleum Research

Few of us would care to trade any of the modern automobiles now on the market for one manufactured 25 years ago. Besides advancements in style, comfort, and safety features, the modern car is far more powerful than the car of a quarter of a century ago. Yet the modern motorist gets this extra power with little, if any, extra fuel consumption.

In building faster, more powerful motor cars, automobile manufacturers recognized that their problem was to design either a larger engine or a more efficient engine. Obviously, the development of a more efficient engine was the practical solution. An important obstacle that had to be overcome, however, was the lack of a suitable motor fuel for the better engines that the engineers wanted to build.

From experience, automotive

engineers and petroleum refiners had learned that, generally speaking, the more efficient the engine, the greater its tendency to "knock" with a given fuel.

In order for gasoline refiners to learn to make fuels with greater knock-resisting qualities, they first had to learn what caused "knock" and how to measure the anti-knock qualities of different fuels and blending stocks.

Research shows that "knock" is caused by faulty, uneven burning of the fuel-air mixture in the combustion chamber. This faulty combustion causes excessive pressures to build up which in turn set up vibrations in the engine structure. We recognize these vibrations as "knock." The problem has been to develop motor fuels which burn evenly in modern, high compression engines.

To determine the comparative

anti-knock qualities of various gasolines, manufacturers have devised a system whereby the gasoline to be tested is compared to a reference fuel of known anti-knock characteristics. This has been done in the laboratory for many years and has been of great value in aiding petroleum refiners to manufacture gasolines with better anti-knock qualities. As a result of these laboratory tests, refiners are able to rate the anti-knock characteristics of gasoline in terms of "octane number." According to this rating system, the higher the octane number, the greater its anti-knock qualities—provided that the gasolines being compared are tested in the same manner under the same conditions.

Researchers have recently developed methods of testing motor fuels for anti-knock performance under actual road conditions. To

do this, standard automobiles are virtually equipped as laboratories-on-wheels.

Among the most modern of these mobile laboratories are those now being used by the petroleum chemicals Division of DuPont Company. This division of DuPont manufactures and sells DuPont tetraethyl lead anti-knock compounds and has long engaged in research to aid petroleum refiners in making better motor fuels.

Outwardly DuPont test cars look like standard 1950 automobiles. But inside they certainly don't resemble the family car. The dashboard has been replaced by an elaborate instrument panel, and in addition to the conventional gasoline tank, ten smaller tanks have been installed in the luggage compartment for holding various types of fuel. A battery of push-buttons on the instrument panel permits the driver to draw gasoline from any of the tanks.

As a result of the extensive research carried on by the petroleum and related industries, modern premium-grade motor fuels have kept pace with the increasing requirements caused by the development of the efficient, high-compression automobile engines of today.



THE COVER

The cover picture shows the battery of fuel tanks in the trunk compartment of one of DuPonts test cars. The car is equipped with 10 auxiliary tanks—6 for reference fuels and 4 for test fuels. Pushbuttons on the instrument panel (see picture on opposite page) allow the operator to switch from one tank to another. Reference fuels are made up of blends of iso-octane, which is given an octane rating of 100, and normal heptane, which has a rating of zero.

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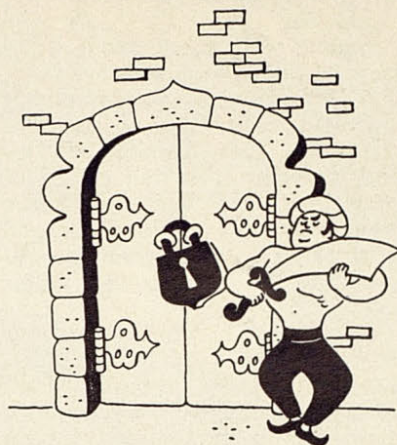
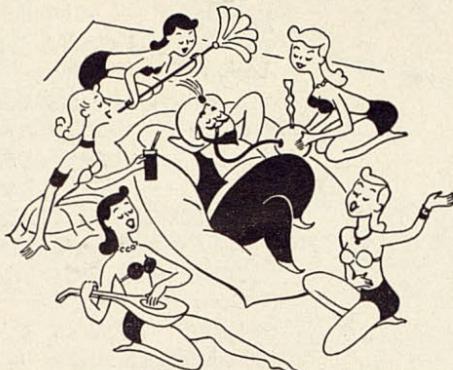
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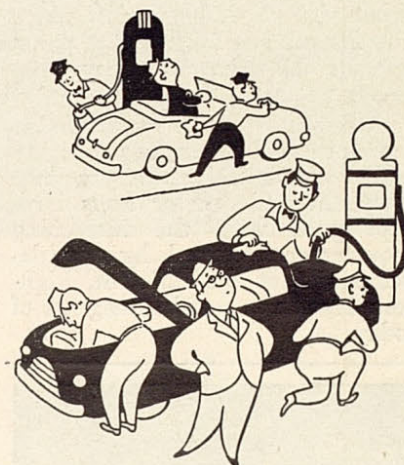
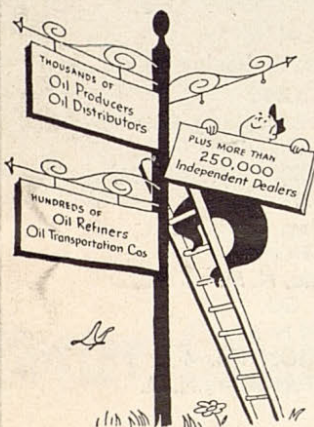
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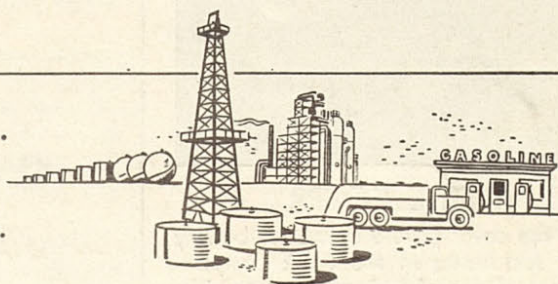


Take one person... who has everything to himself... and you have a monopoly.



Take thousands of firms... that strive to out-do rivals... and you have the oil business.

*Thousands of oil companies mean competition ...
competition means progress ...
oil progress means more and better products.*



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