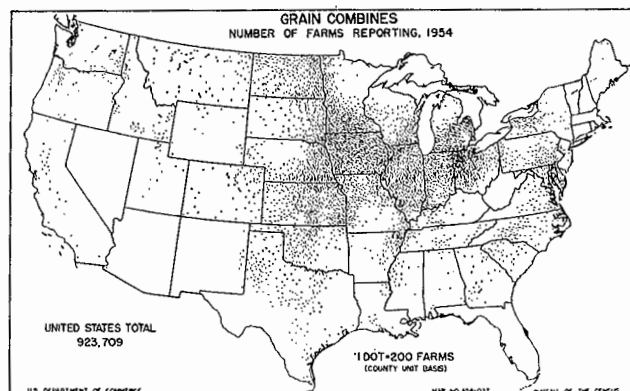


HARVEST MACHINES

Adaptable and versatile tractor power has supplied the real force back of the development and improvement of field machinery suitable for our many types and sizes of farms. The harvest machines discussed in this report are those for which the Bureau of the Census has reported information on numbers and farms reporting. Including are grain combines, corn pickers, pick-up balers, and field forage harvesters. These are timesaving machines which enable the farmers to do better harvest jobs, especially under emergency conditions when timeliness of operation is most essential. Generally, they enable 1 man or a small crew, to do the work done by 2 or more men under harvest conditions prevailing about the time of World War I. They have enabled farmers to reduce the hours of labor used to harvest an acre or ton of product, and to do the work faster and easier. The labor savings of these machines over older harvest methods are indicated by the following data :

to harvest small grains, flax, soybeans, sorghums, and grass and legume seeds, and are concentrated in areas where these crops are grown commercially. About half of the farms with combines in 1954 were located in the Central area and about one-fourth were located in the Great Plains area. Together, the Western, Southern and Eastern States had only about a fourth of the farms reporting combines. In the humid areas of the country, combines tend to be smaller in size than they are in the Great Plains and the Western regions where grain fields and grain acreage per farm are large.

Item and area	Man-hours used by—	
	Old harvest method	New harvest method
WHEAT in the Great Plains.	6 hours per acre. Cut with binder, shocked, and threshed from shock.	1.5 hours per acre. Combined from standing grain.
CORN in the Corn Belt.	8.2 hours per acre. Harvested by hand from standing stalk.	2.8 hours per acre. Harvested with mechanical picker from standing stalk.
HAY in the Central States.	2.8 hours per ton. Handled from windrow to storage with hay loader and power fork.	2 hours per ton. Handled from windrow to storage with automatic-tie pick-up baler and tractor trailer.
HAY in the Central States.	2.8 hours per ton. Same method as above.	1.1 hours per ton. Handled from windrow to storage with pick-up chopper and motortruck.



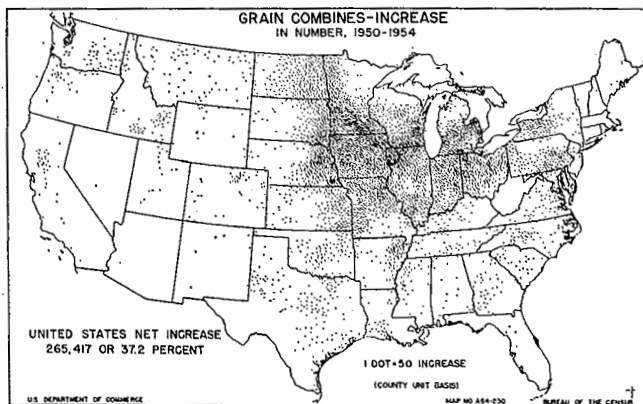
GRAIN COMBINES

Between April 1950 and November 1954, the number of combines increased from 714,000 to 989,000. Although increases occurred throughout the grain areas, almost 80 percent of the total increase was in the Corn Belt, Northern Plains, and Lake States. Increases were greatest in the northern and western areas of the Corn Belt and in the southern portions of the Lake States. It is principally in these areas that the binder-thresher method of harvesting small grain has decreased less rapidly than elsewhere. In many of the areas where combines have shown substantial increases since 1950 a considerable portion of the small grain acreage is combined from the windrow.

The first grain combine was built in Michigan before the middle of the 19th century. After a decade of limited use, it was not considered a success under eastern conditions and it was shipped to California. Its use under California conditions was encouraging and in 1880 factory production of combines was initiated there.

On a county basis, some localities showed reductions in numbers of combines between 1950 and 1954. Most of the counties reporting reductions in numbers are in the Southern and Central Plains, where recent small grain production declined because of reduced plantings and severe drought.

The first combines were of large size, with a cutting width up to 35 feet. They were pulled principally with large teams (as many as 40 horses) and were traction powered. Prior to World War I, combines were used almost exclusively in the Pacific Coast States and Idaho. Smaller combines, adapted for use with gas tractors, and equipped with mounted engines came into use during World War I. With the new combines, the combine method of harvesting small grains soon became popular in the Plains and Mountain States. Gradually, the use of combines spread into the more humid areas of the United States. Small combines, some with a cutting width of about 40 inches, were first developed around 1930. The small combines are usually operated with tractor power take-off. During World War II the self-propelled combine came into use and has proved quite popular.



In November 1954, the number of farms reporting grain combines and number of combines reported was greater than for any previous year. The 989,000 combines of that date were located on 934,000 farms. Modern combines are used primarily