

Ford Farm Research Center Formally Open



AN IDEA TAKES SHAPE ON PAPER
In drafting room of tractor engineering dept.

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Ford Motor Company's new research and engineering center shares a 75-acre site with the company's tractor and implement division's general offices at Birmingham. The center was opened with official ceremonies yesterday.

Approximately 1100 people, a high percentage of whom are technicians, engineers and highly trained researchers, are now located in the center and in general offices. Two years ago there were 700.

The center's 112,000 square feet "under roof" is filled with technicians who seem to be almost evenly divided between two teams—the constructive and the destructive.

IN SOME areas, men spend their designing new parts or new equipment that will bring some farm task nearer the "push button" stage.

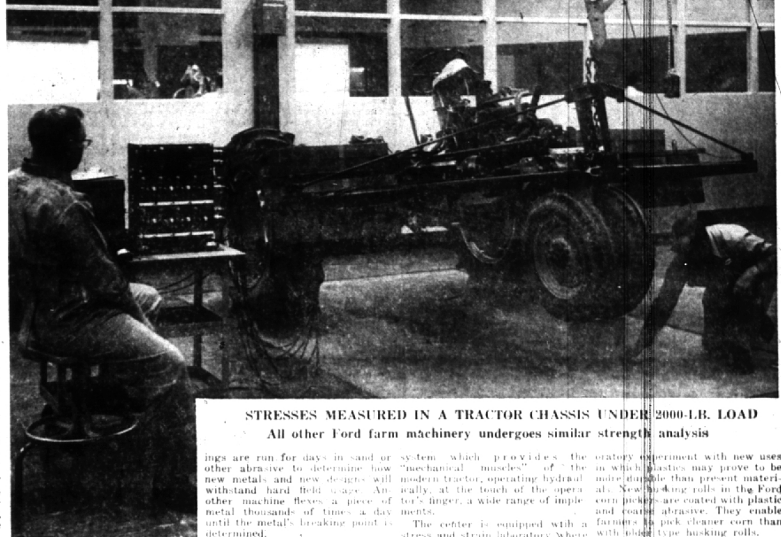
Then they turn their brain-child over to the destructive team whose tasks seem to be to determine how quickly the machine can be broken down—scientifically, that is.

Complete facilities are available for tractor engineers, for implement engineers, for harvesting machine engineers, to plan, develop and design together, under one roof, tractors and farm machinery. It is believed to be new to the farm machinery industry.

"Farm output per man-hour of labor has nearly doubled since 1940, largely due to greater mechanization," said Dale Roeder, chief engineer and director of the new center.

"Yet, we are convinced that the field of farm mechanization has barely been scratched. In this new center, we are teaming up top engineering talent with the latest engineering techniques and equipment, and we are pointing them toward the goal of bringing the farmer's own machine tools up to the level of efficiency achieved in the production tools used by industry."

THREE different types of dynamometer tests are used to



STRESSES MEASURED IN A TRACTOR CHASSIS UNDER 2000-LB. LOAD
All other Ford farm machinery undergoes similar strength analysis

ings are run for days in sand or other abrasives to determine how new metals and new designs will withstand hard field usage. Another machine flexes a piece of metal thousands of times a day until the metal's breaking point is determined.

HYDRAULIC engineers conduct exhaustive pressure and flow tests in a separate laboratory. Alternatives are added to the hydraulic oil and, as the tractor hydraulic system is operated, electronic gauges indicate any leakage or loss of pressure that may develop.

TRANSMISSIONS and axles, which must be constructed to withstand years of rugged field use, are driven hour after hour by a dynamometer to determine durability and efficiency. In the fatigue laboratory, bearings are run for days in sand or other abrasives to determine how new metals and new designs will withstand hard field usage.

The center is equipped with a stress and strain laboratory where long electronic gauges, or the use of special paint called "strain coat" determine the exact amount of stress under loads and machinery parts are placed when "at work."

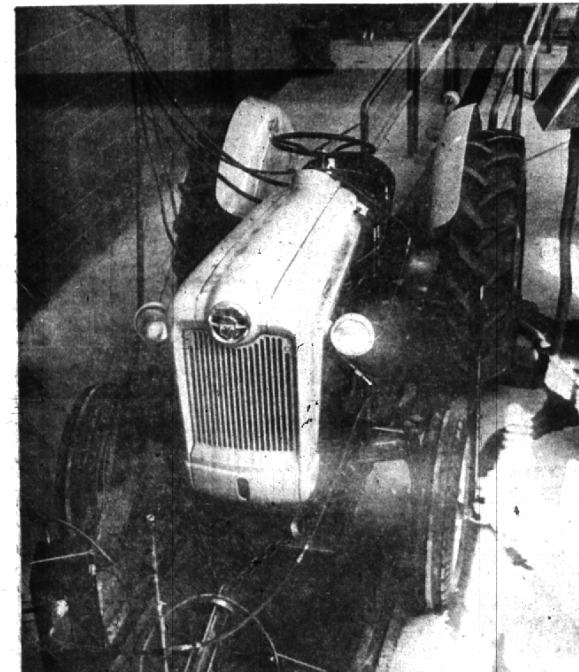
PART of this testing is done in the laboratory, and additional testing is done in the field where a tractors' track, equipped with electronic accelerometers, follows the tractor and equipment in the field through any kind of soil and any weather conditions.

TECHNICIANS in the quality control laboratory constantly check raw material as well as finished products to make sure they measure up to specifications. A chemical and metallurgical laboratory also is in the area as well.

LARGE area in the center is the building and tear-down area where engineers and mechanics may be assembling several machines at one time. Some may look rather rusty and overworked, but they are the forerunners of things to come.



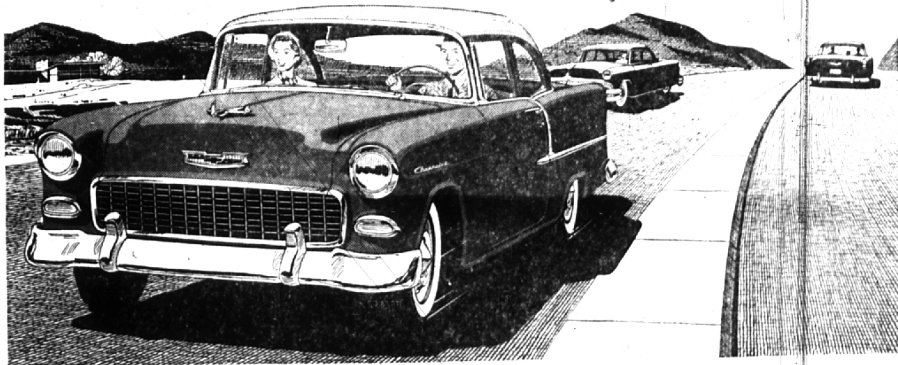
TRACTOR, OTHER MACHINERY EXPERIMENTAL PARTS FABRICATED
In this machine shop equipped with latest metal working tools



FORD TRACTOR UNDERGOES SENSITIVE TESTS
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