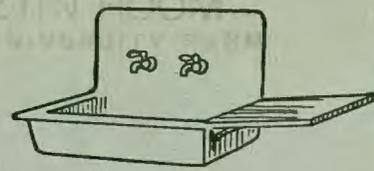
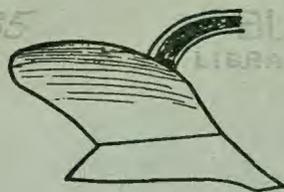
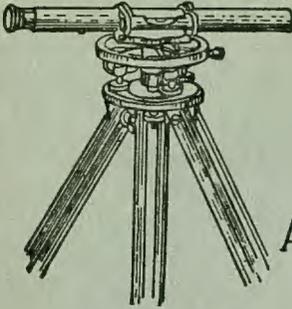


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# AGRICULTURAL ENGINEERING NEWS LETTER

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## Farm Experiences With Rubber Tired Tractors

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Reports indicate that rubber tires are winning a place as a part of the equipment for the farm tractor. This does not mean that all the questions have been answered or all of the problems solved but the advantages claimed for the tires have been sufficient to sell the idea to a goodly number of farmers. The American Society of Agricultural Engineers sent a questionnaire to a large number of users of rubber tires. Nearly forty states were represented in the replies. The principal agricultural states were about equally represented.

The work done with the rubber tire equipped tractors included practically all of the ordinary farm operations. The tires were used on all kinds and conditions of soil, and on all sizes of farms. Most of the replies, however, came from farms ranging in size from eighty to six hundred and forty acres. Some of the tractors represented in the replies were used only a few days a year while others averaged over ten hours a day for the entire year. Taking all of these different points into consideration we have a rather representative cross section of the situation as it stands.

### Traction

While difficulties were experienced under some ground conditions, the matter of traction was in most cases quite satisfactory. It is true that some experimenting was necessary to find the proper tire inflation and wheel weight combination to insure traction under the various conditions. One man found that by reducing the air pressure two pounds in the rear tires, his tractor was able to satisfactorily handle a load which caused undue slippage with the higher pressure. Inquiry indicated that the lower pressure was quite within proper limits for the tires.

As might be expected difficulty was experienced in mud, different types of chain equipment being used with varying

success. Some sort of device which will insure traction under the more abnormal conditions and which could readily be installed or removed will no doubt be discovered. A set of home made chains used on low pressure tires gave better traction in snow than did steel wheels with lugs. Taking into consideration the fact that the tractors on which rubber tires are being used were not designed for such tires the results must be considered quite satisfactory.

### Operations Broadened

The claim has been made that rubber tires would broaden the field of tractor operations and to quite an extent this claim seems to be justified. Some of the uses to which the tractor equipped with rubber tires may be put are making necessary certain changes in the tractor. Hauling on the road for example has indicated the need of brakes. There have been brakes but they were, in general, used for different purposes such as assisting in the steering on the row crop machines or holding the tractor when used for belt work. These seem entirely inadequate for the proper holding of a load on the highway. The added speed at which the tractor can operate also makes the matter of brakes an important one.

The question as to what operations could not be successfully handled with tractors equipped with rubber tires was answered by a large majority to the effect that there were no such operations. A small group listed some few jobs which in their opinion could not be properly handled by means of rubber equipped wheels. An examination of this list of operations showed some for which we would not expect rubber tires to be suitable. Some of these jobs we know have been cared for in good shape by other operators while other jobs should not be attempted until conditions were more favorable. One man very aptly covered the situation when he claimed that he had been able to use his tractor in the field any time that the ground was in condition to be worked. Most of the

men questioned have admitted that it was necessary to change some of their practices in order to take advantage of the possibilities presented by the rubber tires.

### Objections

There have been some objections to the use of rubber tires on tractors when doing belt work. The chief objection was the inability to hold proper belt tension due to creeping. It is claimed that a tractor may be effectively blocked by placing a short piece of plank under the front side of the rear wheel and up over the front wheel. Another objection is the lessened clearance because of the wider tires. With rubber tires on the wheels the static generated by the belt is not able to reach the ground, hence the possibility of an occasional shock when the tractor is touched. It may be necessary to "ground" the tractor by means of a piece of chain similar to the "grounding" of tank trucks.

### Advantages

The rubber tire equipment, of course, meant an added expense and the question then was asked as to the justification of that expense. A distinct saving in the fuel consumption was claimed by a large number of operators and in several instances this saving was not a mere estimate but rather the conclusion from definite tests. A rather large number listed the added speed which was possible as a distinct advantage as the same amount of work could be done in a shorter time or more done in the same length of time. Less time is required in moving from one location to another. While a few will object to the statement that the tractors with rubber tires are easier riding, this was third in the list of reasons justifying the tire expense. One report, while claiming easier riding, made a special point of the greatly reduced field dust. Contrary to what might be expected, it is reported that tractors with the rubber tires handle better on side hills and also show better results under many conditions when pulling up hill.

Admitting that their experience was limited and that all the problems were not yet solved, a large part of the operators questioned were quite sold on the idea of rubber tires not only on the tractors but also on other pieces of farm equipment.