

## REPORT OF SUBCOMMITTEE ON ROADSIDE EQUIPMENT

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The following report on roadside equipment is compiled to introduce the equipment to you. Some of this has been reported on in the past two years, but because of new developments the machine has been redesigned and therefore it is being reintroduced to you.



Spreader - The spreader handles any type of aggregate. The hopper construction and belt conveyor will accommodate material up to 6 in. maximum. The hauling truck is backed up to the hopper and, with the brake set lightly, it is pushed forward at proper speed by the spreader. A two-man crew operates the machine easily and speedily. Accuracy of results eliminates need for raking and fill-in and in most cases forms are not needed. All controls are within easy reach of the operator. The hopper has a 3-yard capacity and the conveyor belt is 24 in. wide and will handle almost any type of material. A standard machine provides for any depth of fill to be made 2 to 4 feet wide. The spreader is powered by either a Hercules Model IXB or Continental F-140 engine. The machine has four speeds forward and one in reverse. All gears run in oil and are enclosed in an oil-tight case.



**Mechanized Hand Scythe** - The machine is mounted on a three-wheeled, pneumatic-tired, self-propelled truck. The same engine which propels the truck also drives a 30-in. cutter bar being operated on the other side of the fence. The cutter bar is driven by a universal joint vertical shaft attached to a counter-balanced swinging boom. The boom is supported on a tower on the truck and is free to swing through a full 360 deg.

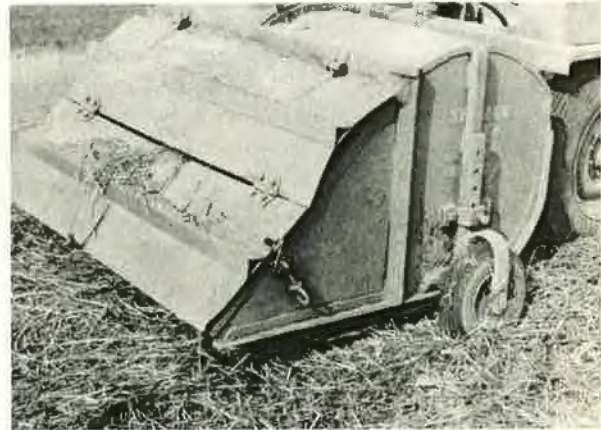
In operation, the machine requires two men. The man doing the mowing stands on the bank outside the fence and, by means of a handle attached to the cutter bar, cuts the grass and brush by using a raking motion. Since the cutter bar is counterbalanced, very little listing is required and he can mow down a steep slope or a near level area. He can mow to a distance of 12 feet behind the rail if required. The other man rides and steers the truck.

In order to move the mower over the highway the clutch disengaging the mower bar is thrown out and the cutter bar hooked to the rear end of the truck. A trailer hitch is provided at the rear. The rear wheel is lifted from the ground when the hitch is made and the front or steering wheels are locked in place. In this manner it can be towed as a two-wheeled trailer.



**Power Sickle Bar Mower** - The tractor has three wheels, with the single wheel in the rear. The wheel base is 55 inches. The operator sits directly in front of the rear wheel. A steering arm is attached to the single rear wheel. This type of steering enables the machine to be turned in its own length and makes it very maneuverable.

The tractor has a 4-horsepower air-cooled 4-cycle Wisconsin engine. The 3-A belts, in smooth, machine-grooved sheaves, deliver the full power output to the wheels. The belt tightener serves as a clutch. It has a Borg Warner automotive transmission, 3 speeds forward, 1 reverse, and a Borg Warner differential in the front axle. It will travel at a speed of 5.6 miles per hour in high gear and 1.7 miles per hour in low or reverse gear. The cutter bar is 4 feet long with 2-in. guard centers. The cutting angle is 45 deg. below to 45 deg. above horizontal and adjustable shoes govern the cutting height from 1 to 3 inches.



**Pulvi-Mixer** - The rotary tines, which revolve inside a metal hood, is driven by a Wau-Kee-Gan motor. It is 4 feet wide and will pulverize the soil or incorporate soil with the straw mulch to keep it in place. Wheels attached to an adjustable bar govern the depth of the cutting of the tines. These additional wheels keep uniform the depth the tines cut because the wheels follow the grade or contour of the ground.



Straw Blower - A sloping track made up of many individual rollers allows a bale of straw to be pushed from the supply truck to the hopper. The bale is upended into the hopper. Two bars allow the bale to rest just so the steel fingers can pull the straw into the blower compartment. The fan blows the straw into a pipe which directs the straw to the area to be mulched. A hood attached to the end of the pipe is worked by means of a rope attachment. By lowering the hood the straw is deflected so it will not carry far. By this means all areas are covered.



Grass Edger - The disc is held in place by means of a frame which is attached to the tractor. The frame is equipped with handles and the disc can be controlled in this manner. It is used in cutting the grass overhanging the curb of narrow median strips.



Henry Backhoe - The Backhoe is fastened to the rear axle and frame of the tractor. It is actuated by a hydraulic system with power developed from the tractor's hydraulic pump. The bucket is free to swing 180 deg. under hydraulic control. The capacity of the bucket is approximately  $1/5$  cubic yard. It will dig to a depth of approximately 6 feet and will lift to a height of approximately 4 feet.



Jeep-A-Trench - The mechanism is attached to the rear frame of the Jeep. The source of power is from the power take-off.

There is a choice of three types of mechanisms linking the power take-off with the Jeep-A-Trench. The recommended mechanism is a direct connection similar to a differential of an automobile. The digging boom is raised or lowered either by a hand-operated wheel and cable device or by an electric lift operated by push-button control on the dash.

The machine digs a trench in the average type of soil 300 feet long, 42 inches deep, and 14 inches wide per hour. It is capable of digging to a depth of 6 feet by using the long boom which is provided. The excavated soil is pushed to both sides of the trench by two worm gears which are adjusted to accommodate the depth you wish to dig.



Self-Powered Trenching Machine - The trenching is done by a rotating wheel with digging buckets attached. The buckets dig out the earth and dump it on a conveyor belt which deposits the soil to one side of the trench. The depth is governed by a cable and winch attachment. The machine is self-propelled on crawler treads.



A similar trenching machine (to above) has digging buckets attached to an endless chain mounted on a boom.



English Harrow - The English Harrow must be towed. It differs from the conventional harrow in that it is very flexible, due to the method by which it is linked together. Each link has two projected tongs or teeth.



Grass and Fertilizer Seeder - The machine has two compartments of two sections each. The rate of application is governed by the size of the openings. This is regulated by two levers. The agitator is run by means of a chain connected to a sprocket wheel attached to the axle of the rollers. The driving rollers is welded to the axle. The seed and fertilizer is covered by means of a harrow-like attachment. This is attached to the frame of the machine and fits directly behind the seed and fertilizer compartments. A divided roller completes the outfit which can be obtained in 4 and 6-foot widths.



Floss Rig - Floss rig is a 500-gallon tank on a trailer, the agitator is powered by  $6\frac{1}{2}$ -horsepower gas engine. The floss is delivered by a 2-inch centrifugal pump using various nozzles for distance of spraying.



Herbicide Spraying Equipment - This sprayer is equipped with a single nozzle with an orifice and supplied by pressure determined by the quantity of material required per unit of area. A small gasoline-powered pump delivers material to the "truck gun" which is mounted by ball-and-socket joint on track for spraying. The supplementary gun is used on the slope and supplied by the same pump.



Soil Shredder - The shredder is powered by a pulley driven by a belt attached to auxiliary power such as a tractor or truck. The machine is mounted on skids and is portable, requiring no special base. Soil is shredded by rotating knives.



Knapsack Spraying Equipment - This knapsack is especially designed for herbicide spraying. The 3-gallon tank is equipped with a 10-ounce-capacity carbon-dioxide cylinder and pressure regulator valve to maintain 25 pounds per square inch. Its weight when loaded is approximately 30 pounds. The gun is all aluminum and is equipped with 3 nozzles 18 inches on center, delivering approximately 2 gallons per minute each at 25 pounds per square inch.





**Lime and Fertilizer Spreader** - The truck has a specially built bed with sloping sides. A worm gear operating in the bottom of the bed delivers the material through a small door. A chain which operates from the left rear wheel of the truck provides the power for this. The chain also provides the power for the agitator which distributes the material in "cloud-like" effect over the area desired. The agitator is fastened on the outside of the truck in such a position as to catch the material as it is turned out of the truck by the worm gear.



**Leaf Loader** - The equipment is assembled on a tractor. Power is secured

from a standard Ford tractor through multiple V-belts from power take-off. The length is 136 inches plus overhead hopper at rear. The height is approximately 11 feet 6 inches. The leaves are sucked into the hopper or ventura which is attached to the front of the tractor. It is easily lifted or lowered by a hydraulically controlled mechanism. The fan is made of steel blades heavy enough to handle material such as leaves, twigs, branches, stones, and bottles.

The leaves are blown into the storage hopper which is made of expanded metal  $\frac{1}{4}$ -inch mesh and an all-steel frame. The storage hopper is hydraulically dumped by a touch control lever on the tractor. The hopper is high enough from the ground to accommodate a dump truck for loading purposes. One storage hopper full is an average dump-truck load.



Disc - The disc has the alternate disc removed for stabilizing mulch. The machine can be set at various degrees to govern the depth of cutting.



Cultipacker - The cultipacker is in three sections which allow for movability and allows a greater area to be worked at a time.



Spike-Tooth Harrow - One or more sections can be used. A lever controls the angle of the cutting teeth so various depths of soil can be loosened.



Threshing Machine - The machine is powered by a pulley which is driven by belt attached to auxiliary power such as a tractor, truck, or Jeep. The machine is mounted on rubber tires and is easily towed. The material to be threshed is placed in the machine which separates the seed from the straw by a series of knives or beaters and various screens moving in such a manner to give a sifting effect.

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