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GRIST 1965 AWARD WINNERS NAMED

It pays to pass your maintenance and operating ideas on to GRIST. At least, that's the opinion held by three people who received the annual cash awards for the best ideas published in GRIST during 1965.

First place winner was Lyle McDonald, Supervisor of the Warren Dunes State Park, Michigan, for his invention of the T-lock for pipe gates reported in the January/February issue, Vol. 9, No. 1, page 2. In the photograph below, Arthur C. Elmer, Chief, Parks Division of Michigan is shown handing Lyle a check for \$100.



Mr. Elmer informs us that Lyle McDonald, Supervisor of Watten Dunes State Park since 1946, is a dedicated, hard-working and truly interested park employee who is well-deserving of the award. Warren Dunes, with two and one-fourth miles of frontage on Lake Michigan, contains more than 1400 acres of outstanding scenic beauty in the southwest part of the state. Attendance there during 1965 was nearly 533,000.

Second place winner was John Djuplin, Conservation Aid III, Potawatomi State Park, Sturgeon Bay, Wisconsin, for his design of a refuse can holder reported in the March/April issue, Vol. 9, No. 2, page 15. Donald J. Mackie, (I.), Superintendent of Parks and Recreation, Wisconsin Conservation Department,

Madison, is shown here presenting a check for \$50 to Mr. Djuplin for his award-winning idea.



To the third place winner, Arthur T. Wilcox, now Professor of Outdoor Recreation at Colorado State University, Fort Collins, Colorado, went a check in the amount of \$25 for submitting the idea for winter sports flares, also reported in the March/April issue on page 14. Prof. Wilcox sent this item to GRIST while he was Director-Secretary of the Akron (Ohio) Metropolitan Park District.

Winners of the annual GRIST awards are named by a special committee which reviews all items printed during the year in Park Practice GRIST. The only requirement for award consideration is that the contributor of the idea be in private work or an employee of a non-Federal park or recreation organization. Federal employees are excluded from consideration by reason of the fact that they can benefit under Federal Incentive Awards programs.

There is still time to send your ideas to the Editor for publication in 1966. You probably can't think of a good reason why you shouldn't try for one of the cash awards to be made for ideas published this year. Look around you; you'll probably find many items others could use in their operations. GRIST is the publication to tell them about it.

"SOLAR GENERATOR" FOR EMERGENCY WATER

Personnel on back country desert patrol might do well to carry with them a "solar water generator" kit, suggests Park Naturalist George B. Robinson, Platt National Park, Oklahoma.

The principle of the "solar water generator" is simple, and the only materials required are two sheets of plastic, one about three feet square, and the other about one foot square.

1. Dig a hole about 18 to 24 inches deep by 18 to 24 inches in diameter.
2. In the center of it dig a smaller hole about 8 inches deep by 6 inches in diameter.
3. Line the small hole with the small sheet of plastic, forming a receptacle for the water.
4. Place several pieces of cactus or other succulent plant around the edge of the hole.
5. Cover the large hole with the large plastic sheet and weight the edges with rocks to hold it in place.
6. Place a small rock in the center of the large sheet of plastic to form an inverted cone with its apex immediately over the small hole.

Solar radiation will cause moisture in the plants and soil to evaporate, which then condenses on the plastic cone and trickles down into the small hole receptacle. The process is slow, but it could be a life-saver.

George made up for himself a handy, easily carried "solar water generator" kit. From a plastic garbage can liner he cut the two sheets of the recommended sizes and placed them in a discarded 3" by 6" metal stamp pad box. On a three by five inch card he typed out the above instructions and glued the card inside the box cover.

I wonder when we will ask recreationists to bring all metal and glass containers back from wilderness areas into which they are taken.

-J. V. K. Wagar

Park Practice GRIST

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Speaking of Interpretation -

"...BUT ONLY GOD
CAN MAKE A TREE"

LET LEAFLETS
SPEAK FOR THEMSELVES

Who of us has stood amidst majestic trees and not wished he had memorized Joyce Kilmer's immortal tribute. To give visitors the pleasure of reading the poem in a forest setting, the sign shown here was erected at one of the stops on a self-guided nature trail in Jefferson National Forest, before a virgin stand of hemlock bordered by large oaks. The undercover in this setting is a dense thicket of native rhododendron among long fallen logs of once mighty chestnuts.

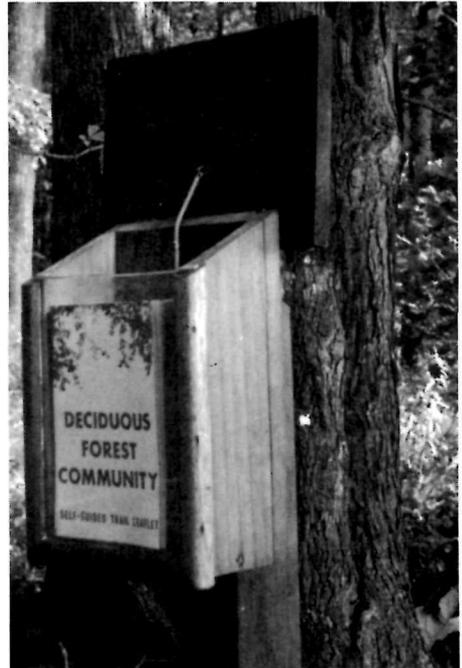
The poem and the outline of the mountains were routed on 3/4" plywood 16" by 27". A silhouette, also 3/4" plywood, of an evergreen on the left and of a deciduous tree on the right, was cut out with the joining bottom rough-cut to give the suggestion of a stone ledge. The silhouette was then over-mounted. The routed letters, together with the overlay silhouette give depth to the sign. The lettering is painted cream and the rest of the board is cedar stained. Forest Supervisor W.C. Curnutt shares the idea with GRIST readers.

TREES

I think that I shall never see
A poem lovely as a tree.
A tree whose hungry mouth is prest
Against the earth's sweet flowing breast;

A tree who looks at God all day,
And lifts her leafy arms to pray;
A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.
Poems are made by fools like me,
But only God can make a tree.



*Sincerity is the highest compliment
you can pay.*

—Ralph Waldo Emerson

STREAMLINED CATALOGING PROCEDURE

Visitors or area personnel often bring in small objects found at Wupatki National Monument, such as projectile points or beads. Since it is more efficient to set up cataloging equipment when a number of items are to be processed (and it usually isn't possible to catalog items at the moment they are brought in, anyhow), a safe and orderly means of keeping these small items was needed. Archologist Don P. Morris, found a good solution.

Don drops the found item into a standard window envelope, seals the envelope and records on it the essential data (usually the date, name of finder, provenience, and accession number). The object can be seen through the envelope window, the vital data are safer than if recorded on a loose piece of paper, and a number of envelopes can be neatly stored until such time as it is convenient to set up the cataloging equipment.

Although cataloging can wait, Don reminds us that the item should be accessioned immediately.

SIMPLE, CHEAP MICRO-PROJECTOR

"In the water world are many strange-looking animals, but they are so small that few people know about them. Here they are magnified many times and you can see what interesting creatures they really are."

That note on an exhibit box at the River Trail Nature Center near the Allison Woods picnic area in the Cook County (Illinois) Forest Preserves introduces an elusive and fascinating world for both young and old—a world that the staff can now show satisfactorily to visitors because of a simple device designed by Don R. Kessel, former Director of River Trail Nature Center.

Demonstrating near-microscopic life to groups had been a challenging problem to Don for some years and he experimented with expensive available equipment and improvised devices. Museums gave a hint to a method in their use of movie film projected on special glass mounted in walls or exhibit panels thus giving a TV effect. The projector is hidden behind the exhibit front and the screen is designed to be brightly illuminated even in daylight.

In efforts to exhibit a balance of many kinds of things found in nature, the need to show aquatic plants and animals becomes most important. Combining the museum technique with a cabinet that happened to be available and some odds and ends obtained at an optical supply house, Don built a micro-projector that is easily maintained and works well.

The cabinet (see drawings), 44" long, 26" high was raised on a box built of 2" x 12" lumber. A canopy 13" high with a removable top was placed on the cabinet to house the projection equipment and specimens. Screen height was planned with young visitors in mind and is 38" off the floor. It happened that the cabinet had been designed to hold a stainless steel pan, so had a recessed top. With pan removed, the depression permitted the nesting of the projection lamp housing, lens, and specimens on a board that aligns them and angles slightly upwards toward the screen which is mounted in one end of the canopy. The screen end of the canopy is slanted inward, to prevent distortion of projected light. The resulting overhang and a coat of flat black paint around the screen minimize interference of overhead light. The glass screen, mounted in a cut-out, is held in place by molding. A piece of plate glass is placed in front of the screen to protect it from inquisitive fingers.

A momentary switch at the end of a short piece of heavy-duty electric cord saves on lamps and prolongs the life of

specimens by limiting illumination to relatively short periods. The living material is subjected to heat and light only when the visitor presses the switch. A rubber guard such as is used on electrical appliances protects the cord from wear and eventual breaking at the point where it passes through the box to the outlet within. To finish the box, drawings or models of some kinds of animals and plants that are likely to be seen are placed on the canopy sides to serve as a key.

These simple parts make up the projection equipment:

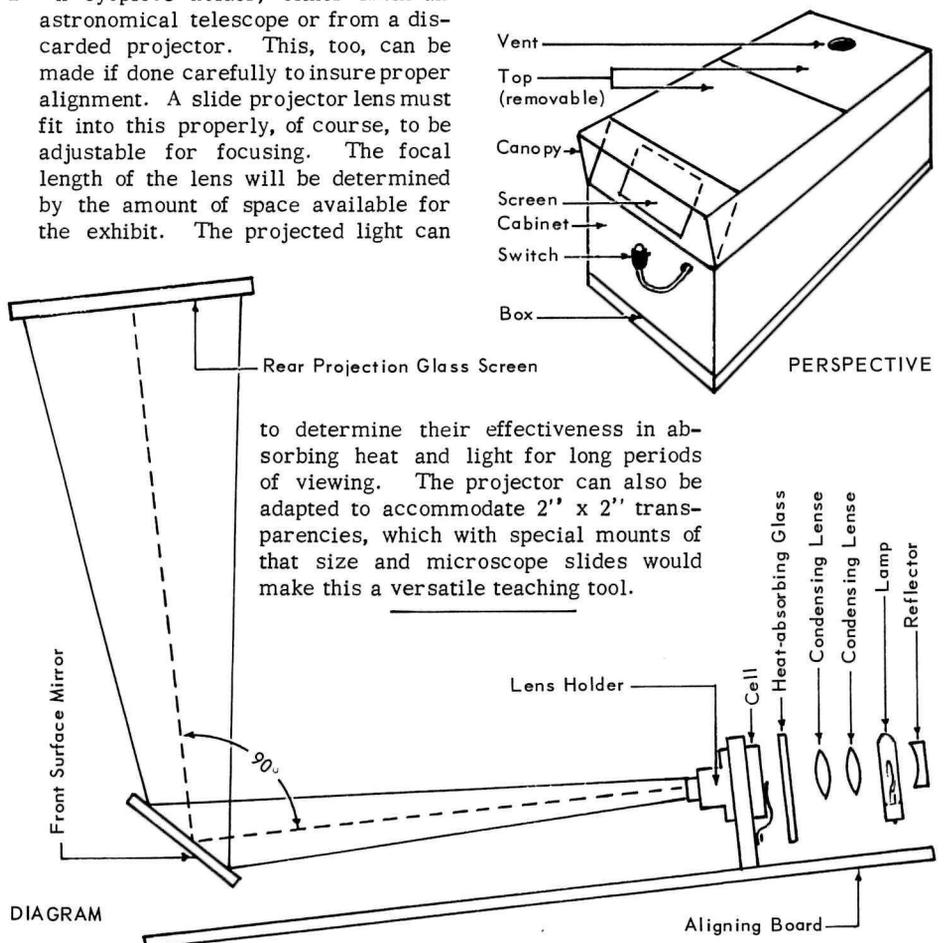
1. A lamp housing consisting of a 150 or 200 watt projection lamp, a reflector and a condensing lens system. (Don took his from an old Kodak slide projector, but they are, of course, available at an optical supply house.) A suggested arrangement would be two 2 3/8" condenser lenses of 3" focal length mounted in front of either lamp and reflector mounted independently, or a lamp with a built-in reflector. Which-ever arrangement is chosen, this unit should be well-ventilated, preferably with a motor-driven cooling fan vented to the outside of the box.
2. An eyepiece holder, either from an astronomical telescope or from a discarded projector. This, too, can be made if done carefully to insure proper alignment. A slide projector lens must fit into this properly, of course, to be adjustable for focusing. The focal length of the lens will be determined by the amount of space available for the exhibit. The projected light can

also be bent at right angles by using a front-surface mirror, thereby making the unit even more compact at no sacrifice to picture size.

3. Behind the lens is the living material in a cell fastened with clips. Such a cell can be made of 2" x 2" slide glass spaced 3/16" apart and cemented together. (The construction of this kind of cell is described in detail by Donald J. Borrer in "A projection cell for small aquatic animals," *Turtlox News*, Vol. 36, No. 2:50-51.) Finally, between lamp and cell is placed a piece of heat-absorbing glass to reduce the discomfort to the living material.

4. Rear projection glass screen, 5' by 7' or 10' by 12'. Don used a 1.2" focal-length lens to project on a screen 10' by 12' at a distance of 33'.

Due to the heat-absorbing glass, cooling fan, and short-interval illumination, specimens last for long periods. Paramecia thrive for three or four days with no attention whatsoever; other aquatic animals, especially the crustaceans, seem to do about as well, Don says. Colored glass filters might be experimented with



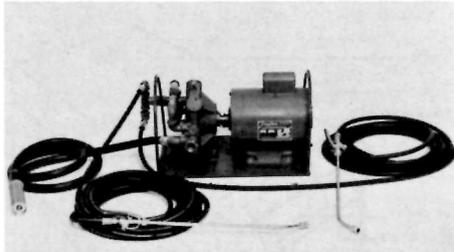
ALL PURPOSE POWER WASHING SYSTEM

A car can be washed in about five minutes without getting personnel wet or dirty, if you use an SKS washing system with a long handled spray nozzle. A cleaning compound in the water removes the grease and grime and then through the same nozzle comes clean water for the rinse.

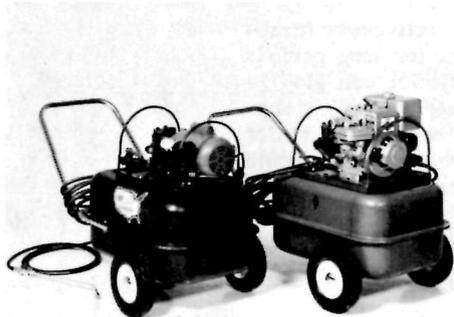
Here are some of the features of the system:

- A 1/3 h.p. enclosed electric motor, 1140 r.p.m., direct drive (3 horse Briggs gasoline engine, direct drive, can be supplied); adjustable h.p. relief valve; 110 v. plug
- 600 lb. pressure gauge
- 35 ft. high pressure braided neoprene hose, allowing free movement without moving the machine
- Mounts on any size drum, 5 to 55 gal. Brass hand gun with fan spray tip
- Master control valve fills container, delivers solution from container and clear water for rinse (water inlet connects to garden hose bib)
- Twin cylinder pump; pump lube fitting
- 8-ft. suction hose, moves easily from container to container

The container mounted model is shown in the photograph below.



In addition, a cart mounted model is available. The tank on the cart carries the washing compound. The picture below shows both the electric motor and the gasoline powered models.



The system handles all types of cleaning compounds, including solvents and mild acids. In addition to car and truck cleaning and motor washing, it can also be used for tractor, trailer, and other heavy equipment washing, for washing building exteriors, and could be especially useful for cleaning and sanitizing rest rooms and comfort stations. The SKS Company informs us that the equipment can also be

used for spraying insecticides and other chemicals.

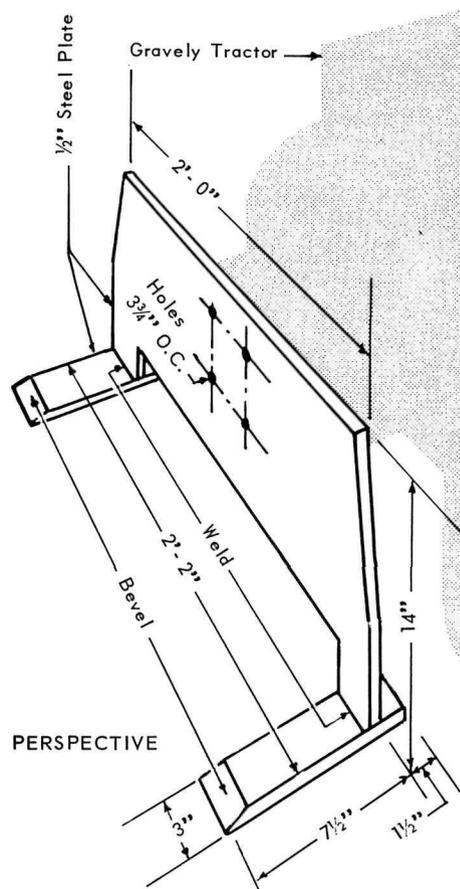
David R. Spivey, Maintenance Foreman IV, Rocky Mountain National Park, who originally informed us of this equipment, used one of the units at a coin operated car wash and found it very effective.

For further information and literature, write SKS Manufacturing Co., 7430 Pacific Street, Omaha, Nebraska 68114.

CURBING CARRIER

One man using a tractor can move pre-cast concrete curbing to the site where it is needed, and place each heavy section with very little hand labor when Don Klinger's "curbing carrier" attachment is available (see sketch). Don, who is Assistant Supervisor of the Island Lake Recreation Area in Michigan, designed his carrier to fit a Gravelly tractor but it could be modified easily to fit others. As the sketch shows, the carrier is made up from three pieces of 1/2" steel plate, two becoming lifting arms which are welded to the third, the supporting back piece.

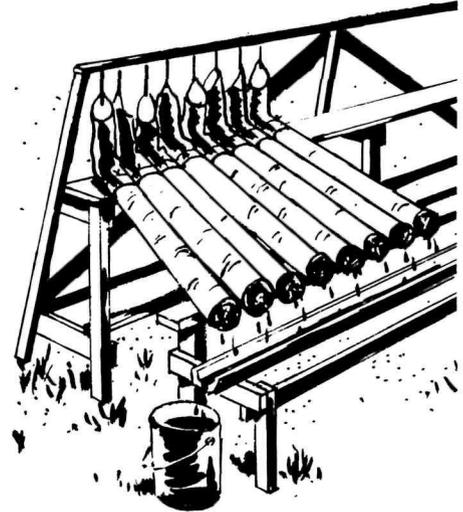
Don warns that the tractor should be adjusted to proper lifting height before holes are drilled to fasten the carrier back plate in place.



It was H. B. Guillaume, in charge of Interpretive Services in the Department of Conservation of Michigan who spotted Don's idea and sent it in.

MAKING WHITE BIRCH RAILS DURABLE

Professor G. A. Harrison, Springfield College, Mass., suggests that many GRIST readers might like to know the process for making rustic white birch rails more durable. Permission has therefore been obtained from F. B. Trenk, Extension Forester, College of Agriculture, University of Wisconsin to reprint the following description of the process.



"White birch lends itself to a variety of outdoor uses, but it rots quickly. A simple method for making birch logs and rails remarkably durable is known as the tire-tube method. It works as well on full-length tree stems as on shorter logs. Treat logs that are freshly cut, within 24 hours after cutting.

"This method involves replacing the fresh sap in the sapwood of the log with a highly toxic chemical such as copper sulfate or zinc chloride. The oily birch bark helps keep this chemical locked into the wood so leave the bark on the logs.

"First, construct a wood rack, five to six feet high, and of changeable length. Make it so butt ends of posts can be raised four or five feet off the ground. To a 2" by 4" rail, about three feet higher than the logs, fasten three-foot sections of old innertubes. Then, using a length of soft wire to serve as a water-tight clamp, fasten the lower ends of the inner tubes to the log butts.

"If nails or staples are to be driven into the treated posts where they are finally set, use zinc chloride as the preservative, otherwise, use copper sulfate.

"If you use sulfate, dissolve it in water by suspending it in a porous bag at the water's surface, using approximately one to one and a half pounds of sulfate per gallon of water.

"Fill the suspended innertubes with the preservative. Instantly, sap will begin to drip from the small ends of the poles—but it will take about 3 hours for the preservative to flow through 6 feet of sapwood, 6 hours for 12 feet, and 12 hours for tree-

length poles. For long poles, you may need to add more preservative to the tube.

"It is best to have a trough under the lower ends of the posts to catch and drain away the sap. Once the bluish copper sulfate or the yellowish zinc chloride reaches the small ends of the poles, the treatment is complete."

PUT HUMPTY-DUMPTY TOGETHER AGAIN

With Dow Corning's "Glass & Ceramic" adhesive you can put the broken pieces of glass, ceramic, porcelain, pottery, china, or earthenware back together with an almost invisible mend. The material is said not to run, to hold on contact without clamping, to cure in eight hours, and to be unaffected by water or temperatures 70° to 500° F. Repaired items can be put into the refrigerator, oven, or dishwasher. The adhesive sells for about 98¢ in stores and is made by Dow Corning, Dept. PP, Midland, Michigan.

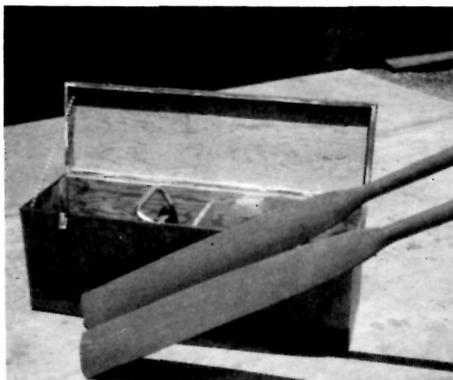
This adhesive was brought to our attention by Marc Sagan, NPS naturalist, who uses it in his work with stained glass figures and plaques.

USES FOR FIBERGLASS PAINT

Donald K. Herne, Foreman IV, Maintenance, Jefferson National Expansion Memorial, Missouri, has found many uses for fiberglass combined with a polyester resin as a finish for equipment and installations subject to extreme exposure. The compound may be purchased at any sporting goods store with complete instructions for application and use. It is available clear or with color added.

Don has used the finish at several parks where he has worked and in his experience it increases durability, even doubling equipment and installation life in some cases. Here are some of the uses.

Non-slip surface. Painted on stair treads, running boards of vehicles, or catwalks and then sprinkled with sand it prevents slipping. Almost any surface can be permanent-coated in this way and ready for use in half an hour.

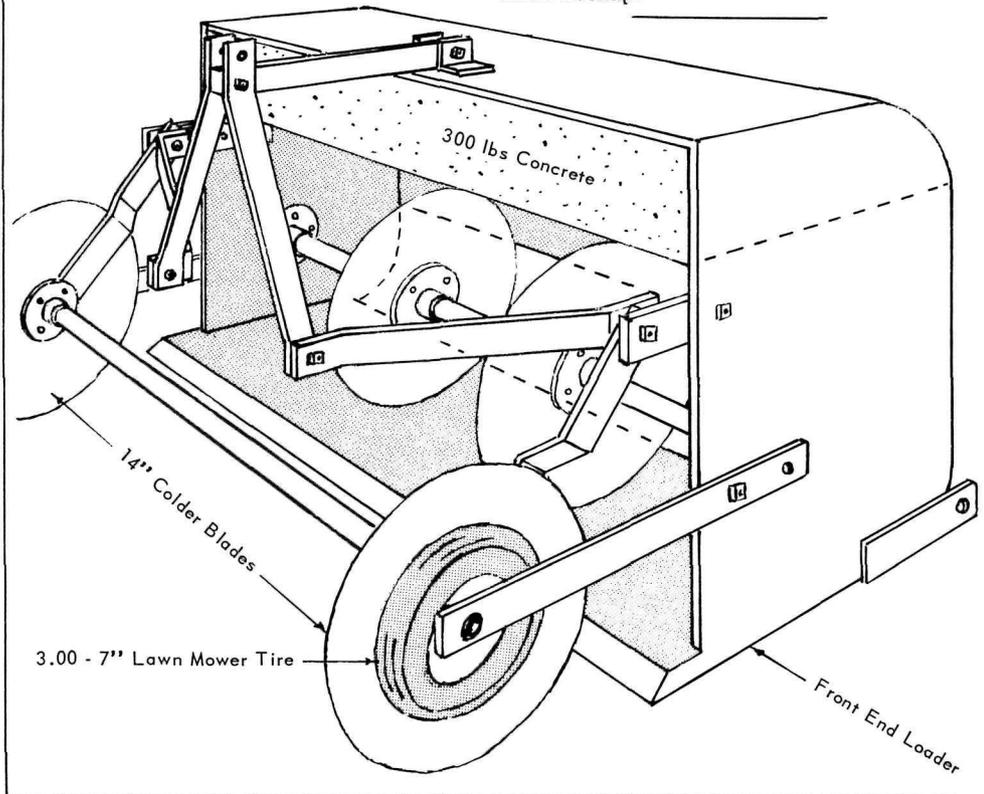


SOD CUTTER FROM LOADER SCOOP

For fast and easy sod cutting with a tractor, make up a sod cutter like the one put together by Roy Kern and Clare Chambers of the Proud Lake Recreation Area in Michigan, shown in the sketch. Roy and Clare used a discarded scoop from a front-end loader for the frame

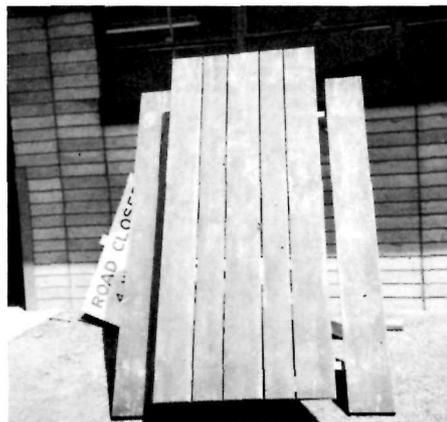
work and under-cutter, adding the vertical cutting blades (14" colder blades) on a pipe axle supported by iron brackets welded to the sides. Two 3.00 x 7" tires from a lawn mower were used on the outside of the colder blade to provide a depth guide.

As the sketch shows, a block of concrete weighing about 300 lbs. was cast in the upper part of the scoop to provide cutting pressure. This Proud Lake cutter is used on a Ford tractor, using the three-point hitch hookup.



Restoration of old picnic tables. By sanding off the old table and refinishing with fiberglass compound, it is restored to new condition with a finish that does not burn, and which repels water, grease, and many stains.

Boat paddles. A coating given to boat paddles minimizes breakage and increases resistance to wear and tear.



Equipment. Applied to many items of park equipment, such as tool boxes, the coating waterproofs them and makes further painting unnecessary.

Green lumber. A heavily used 750-seat amphitheater built of green lumber began bleeding sap and pitch with resultant damage to visitors' clothing. It became necessary to take remedial measures at once. The fiberglass resin compound was used and there was no further maintenance problem. In addition the finish repels water, so when it does become wet it dries quickly.

Plywood signs. A coating will probably double the life of signs, prevent lettering from fading and wearing off.

Lids for campground garbage burning pit. At Dinosaur National Monument, 6 foot culvert buried in the ground is used for garbage burning pits in river campgrounds. Tops for these are made of 3/4" plywood and painted with fiberglass which Don found to be very effective as a permanent finish.

SAFE WALLPAPER CLEANER

Cleaning and preservation of wallpaper in historic houses can be a delicate problem. While cleaning it is no child's play, still, "Playdough", a child's modeling compound, will do the job efficiently and safely, says Manuel J. Sousa, Caretaker at Salem Maritime National Historic Site.

If the wallpaper is stained, Manuel suggests that you just keep rolling the wad of Playdough over the area until the stain disappears. The paper will be cleaned and undamaged.

GRASS TRANSPLANTER ADAPTATION

The ten-year project of sand stabilization at Cape Hatteras National Seashore looked like a financially prohibitive job if the necessary grass planting were to be done by hand. Maintenance Supervisor T. Reid Cabe investigated the possibilities of adaptation by the manufacturers of farm-type machine field transplanters to meet the needs of beach grass transplanting. None of them was interested.

Reid settled upon the Powell "42" single-row transplanter as lending itself most readily to adaptation. Three of these single-row transplanters and parts and pieces from farm implement manufacturers and other sources were taken to a machine shop where a three-row hydraulically controlled grass transplanter was designed and built in accordance with Reid's suggestions.

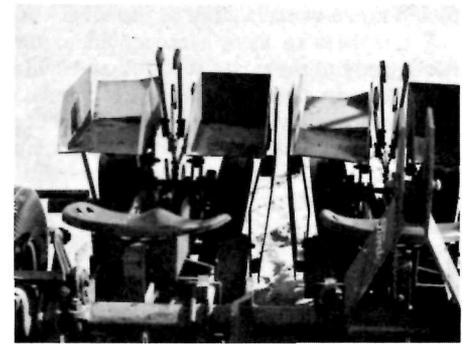
Tractor Tool Bars: (See photos 1, 2, 3, 6) A bar was built for a tractor three-point hydraulic hitch with width, height, and strength enough to pick up the transplanters with the operators in their seats. Two steel angles were placed parallel and one end of each was welded to a clamp stem which was clamped rigidly to the tool bar. The other ends extended far enough under the transplanters to pick them up when the hydraulic lift is raised (see photos 7, 8, 9).

Flexible Transplanter Hitch: (see photos 1, 2, 4, 6) This hitch holds the transplanters in an upright position at all times. When the hydraulic lift raises the transplanters into travel position the hitch becomes rigid and can be locked for road

2. Rear- showing compactness of each machine.



4. Plant fingers clamp onto plants leaving tray.

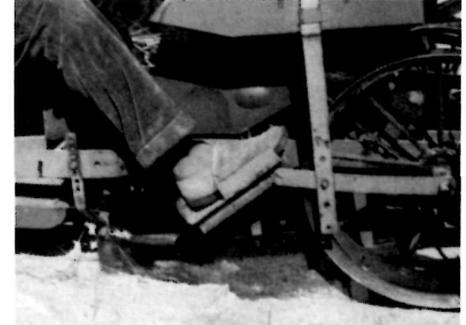


travel. When the transplanters are in work position the hitch is flexible both horizontally and vertically, permitting freedom to follow the land contour with the transplanter shoes piercing the soil to the preset depth.

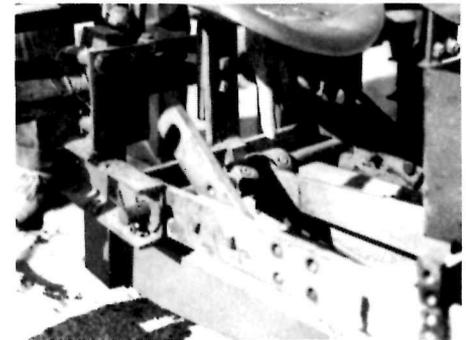
Gauge Wheels: (see photo 5) Two gauge or carrier wheels were attached to the tool bar, one at each end with a raising and lowering ratchet, making it possible for the transplanter shoes to be preset to run at a uniform depth on any terrain on which a tractor can be maneuvered.

Adaptation of Transplanter: Plant hoppers, framework, and brackets were reworked, condensing each machine to a maximum of 24" in width in order to plant in rows 24" apart or wider. The row width can be set by slackening the clamp stems and sliding them along the tool bar to the desired width, then tightening the clamps. Additional metal was added to the depth of the shoe to accommodate different root lengths and to take care of wear. Plant hoppers were made longer (to provide extra length needed when transplanting the longer beach grasses) and mounted above the machine within easy reach of the operator. Seats were relocated so that each operator sits astride a machine. The plant rack is located between the operator's knees where plants are laid one at a time or bunched in the desired amount to be planted in each hill and ready to be carried down by the automatic plant fingers as they revolve to the transplanter shoe where they are automatically released at the desired depth and at the set spacing in the row. Full length foot rests were installed for comfort and added balance for the operator. Sheet metal guard shields were placed between the trans-

5. Transplanter shoe piercing the soil.



6. Hitch locks and equalizing center bearing.



7. Two tapered parallel angles pick-up planter.



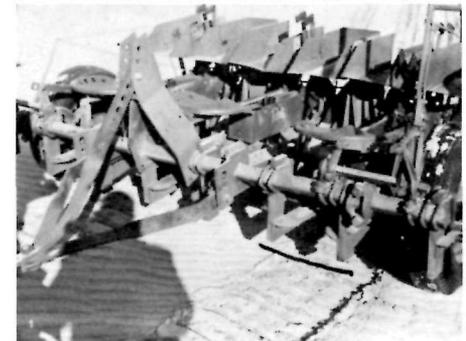
1. Front- three point hitch on tractor tool bar.



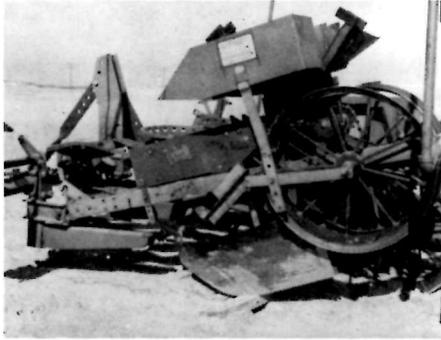
3. Transplanter raised by tractor hydraulic lift.



8. Underlined - 2 of 6 clamps support angles.



9. They raise & lower separately with terrane.



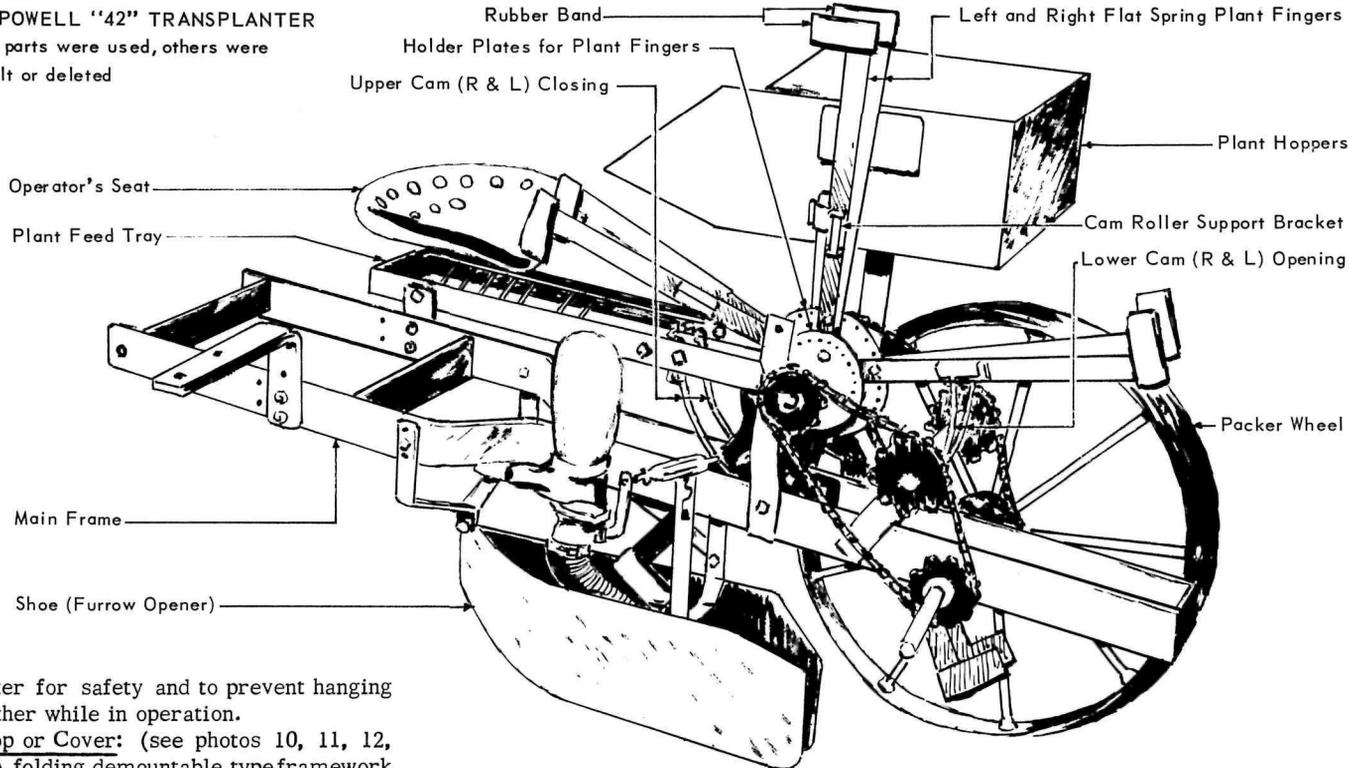
10. Planting in fair weather with top for shade.



11. Planting into a wind with curtains closed.



THE POWELL "42" TRANSPLANTER
Some parts were used, others were rebuilt or deleted



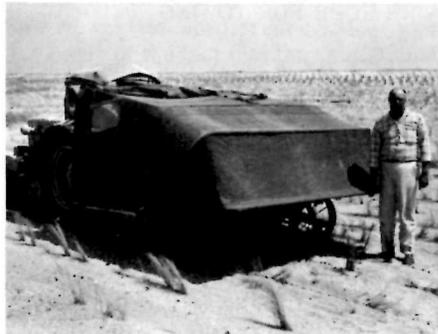
planter for safety and to prevent hanging together while in operation.

Top or Cover: (see photos 10, 11, 12, 13) A folding demountable type framework made of pipe, rods, and flat bar was installed on angles clamped to the tool bar ends. The framework is covered with a canvas top which has plexiglass windows on the sides and curtains with plexiglass windows in the front. The rear third portion of the cover is a caterpillar type which is attached to the front portion and is kept open in fair weather, half closed for light rain or wind, and closed all the way for rougher weather, with clearance allowed to give transplanters freedom in all their movements.

12. Caterpillar top half down for light weather.



13. Caterpillar top down for rougher weather.



MORE WORK FROM A FRONT LOADER

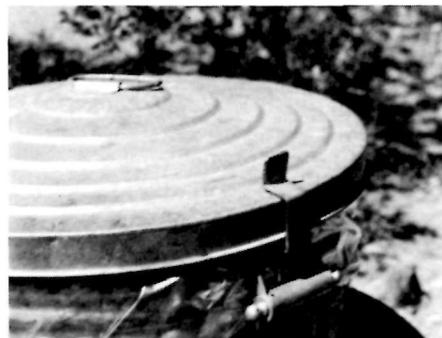
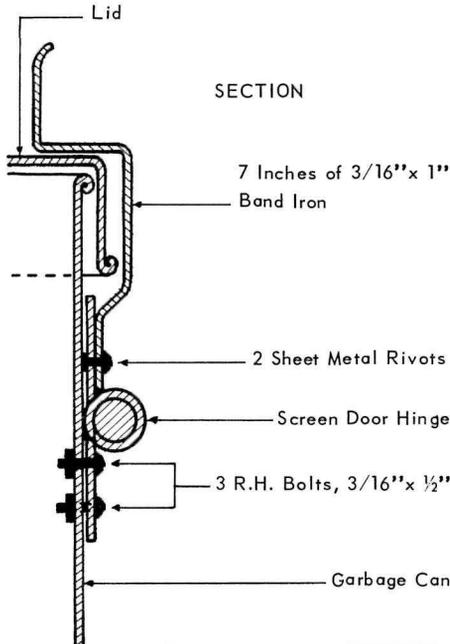
Edward J. Fahey, Senior Park Manager, Southwest Colorado Game Fish and Parks Department, has found ways to give front loader tractors more jobs to do.

By using tapered lengths of old railroad track, and bolting one to each side of the front loader bucket, Ed makes each tractor into a fork lift. Those tapered lengths of rail also can be used as "ripper teeth" to dig out rock.



SPRING CLIPS FOR GARBAGE CANS

To prevent small animals (or large winds!) from removing garbage can covers, Guy Sanderson, Maintenance man, Chiricahua National Monument, suggests placing small spring clips on the cans.

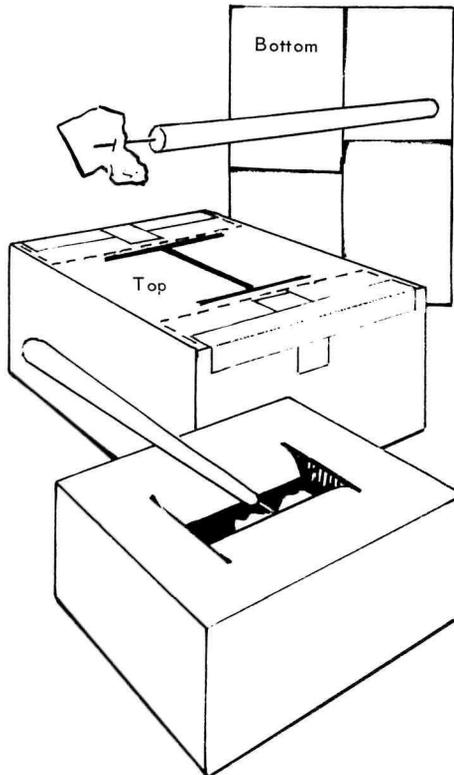


Guy has given the idea a six months try and found that it works. For each can you'll need one pair of screen door hinges (adjustable tension type), 14 inches of 3/16" x 1" band iron, six 3/16" x 1/2" R.H. bolts, and four sheet metal rivets.

WINDPROOF LITTER COLLECTOR

When Jack Houston, Administrative Assistant, Fort Clatsop National Memorial, was a Seasonal Ranger at Crater Lake he had a handy method for stowing roadside trash in the back of his patrol pickup.

First Jack taped a cardboard carton shut. On one side he cut a letter "H" about six inches square. This formed a door through which the trash pickup stick could be poked with its load of litter. The doors formed by the "H" served to pull the trash off the nail when the stick was withdrawn, and at the same time kept the



trash so confined that it wouldn't blow out when the truck was in motion. The door was large enough to take the beer cans and bottles which were poked in by hand, too. When a carton was full it was dropped at the dump and another was prepared. Such a carton often would hold trash collected over a three or four day period.

WIRE ROPE FOR TOWING

"Don't throw away that wire rope or cable when it gets frayed and the wire is flat", says Edward J. Fahey, Senior Park Manager, Southwest, Colorado Game Fish and Parks Department. Ed thinks that used wire rope and wire cable make the best two rigs going. And according to him you can learn to splice wire and with a little practice be good at it. It will save some money, too, he says, that otherwise might have been spent to buy tow chain.

TRASH CAN HOLDER—
FLORIDA VERSION

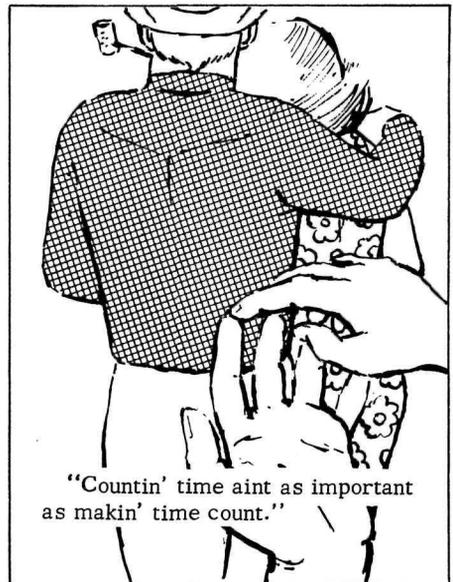
Many are the ways in parks all over these United States of assuring that trash will stay in receptacles provided for the purpose until the container is emptied by park personnel. In this photo, Allen C. Altwater, Member of the Highlands Hammock State Park Board, Sebring, Florida, inspects one of the type used there.



This particular receptacle container offers a number of advantages. First, it is much more attractive than the average type garbage can. Second, it keeps the can up off the ground thereby minimizing rusting. Third, dogs, cats, and the native wildlife find it difficult to get into. Fourth, the hinged roof keeps the rain out of the container without the need for a metal lid. The metal lids, by-the-way, have a habit of getting lost or stolen, and have a tendency to bend so that they don't fit tightly.

We are informed that James Cook, now District Supervisor, District V, Ormond Beach, Florida, worked up this design while he was Superintendent at Highlands Hammock.

RANGER 'RED' sez:-



"Countin' time aint as important as makin' time count."

Jim Burnett & IBL