

SNOWMOBILE SAFETY TIPS

Winter landscapes can be fantastic and the snowmobile has opened up possibilities for new vistas of sight and sound. The Forest Service, in cooperation with private clubs and State agencies has provided many miles of snowmobile trails. They may be old logging roads, old railroad grades, or trails which wind through hardwood forests, pine plantations, and frozen swamplands. But with these new opportunities for enjoyment come some possible hazards.

Snowmobilers who venture off main roads to discover the frozen beauty should be aware of these hazards and prepared for emergencies. The Forest Service, U.S. Department of Agriculture, has prepared a pamphlet, "Snowmobile Safety" on the subject. Here are the general safety tips.

1. Take no one who cannot "walk out" in case of breakdown. Human efficiency declines in cold weather—keep this in mind.
2. Know how to make repairs; carry an emergency repair kit. Have enough gas, with some to spare.
3. Know where you're going—stick to your plan. Inform a responsible person of your planned route and when you'll return.
4. Don't go alone if you can avoid it. Travel in a group of three.
5. Wear warm and windproof clothing. Carry extras.
6. Check the weather forecast. Don't travel in a storm. If weather turns bad, TURN BACK.
7. Carry a map and compass. Know how to use them. Study the terrain beforehand, perhaps on fall hunting trips.
8. Stay on marked trails. They've been designed with your safety in mind.
9. Take a survival kit containing: matches (waterproof), hatchet, plastic sheet, first aid kit, spare food pack, snowshoes or skis.

Many items can be taken for convenience and comfort, but the following is an

WARNING - Fuse Tester Could be Lethal

One of our alert readers, Ralph R. McFadden, Chief, Power and Telephone, of the National Park Service Western Service Center, has written to warn us of a serious omission in directions given for a fuse tester described in our September-October issue of GRIST.

"On page 37, Volume 14, September-October issue of GRIST, there is a description of an inexpensive fuse tester," wrote Mr. McFadden. He goes on to warn us. "The idea is commendable but it could be lethally dangerous, if not used with caution.

"Mr. Moore, who designed the device, did not state that the 4-way switch should be turned OFF before the fuse is placed in contact with the wires. During the test, there is 120-volts between the tester wires if the fuse is open.

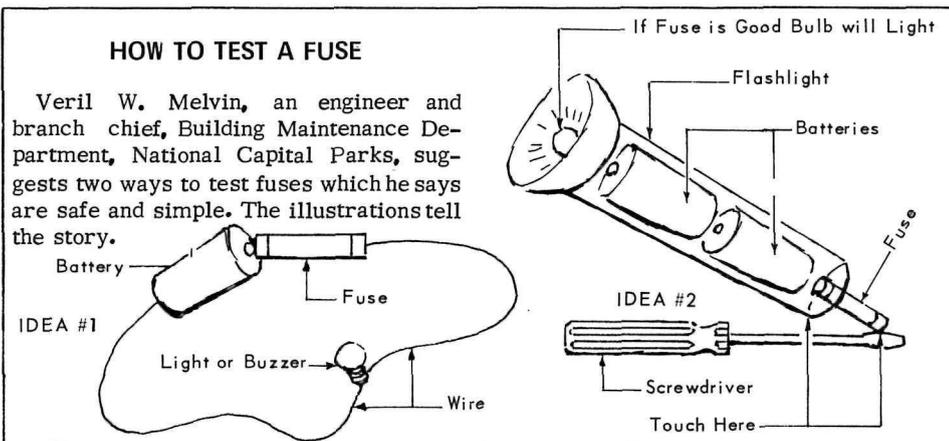
"The fuse must be firm against the wires, after which the switch should be turned on. There is no apparent way to do

this. In order to hold the fuse firmly, yet safely, the fuse should be handled with an insulated tool or (lacking a tool) by touching only the plastic or glass of the fuse, NOT the metal ends.

"Danger still exists even if a person comes in direct contact with only one of the wires. If the user's shoes or body touches a grounded object and the plug is inserted into the receptacle the wrong way, he subjects himself to the full 210-volts (a 50-50 chance). A polarized plug will not remedy the latter situation.

"The way to eliminate these hazards would be to replace the 4-way switch with a 12-volt bell-ringing transformer and to replace the 120-volt lamp with a 12-volt low-current flashlight lamp such as #1891 in a suitable lampholder."

We hope all GRIST readers will heed this warning if they use one of these fuse testers. Our thanks go to Ralph McFadden. ED.



equipment checklist for a day trip up to 10 hours:

CHECK	CHECK
Proper clothing and "extras" for everyone. (Sunglasses, gloves, boots, hats, etc.) _____	Extra gas _____
Equipment in top shape and tested _____	Tools for snowmobile & equipment repair _____
Enough food (emergency rations and lunch) _____	First aid kit (group) _____
Matches (waterproof) _____	Snowshoes or skis _____
Canned heat (to start fire) _____	Plastic tarp (temporary shelter, 6' x 8') _____
Compass and map _____	Rope _____
	Hatchet _____

PARK PRACTICE GRIST

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VANDAL-PROOF TRAIL SIGNS

Trailside signs requesting visitors to "Please Stay on Trail" have been the object of souvenir hunters and vandals at Fire Island National Seashore. Since



NEW
boardwalk trails are used extensively at Fire Island, Maintenance man Richard P. Booth suggested painting the warning right on the boardwalks every 75 or 100 feet.

Besides removing the temptation to theft or vandalism, this method of sign-

TEMPORARY SIGN HOLDER

That looks like a cover for a water line cutoff, but the next picture reveals the real purpose. A piece of pipe inserted in the ground makes a holder for the temporary stop sign. When the sign is not in



use the water line cap covers the hole and keeps it from filling with dirt and debris.

The idea comes from Senior Park Manager Ed Fahey, Cherry Creek Recreation Area (Colorado).

ing is more visible to the visitor, repeats the warning more frequently, costs less, and lasts two or three years without repainting.

OLD



ELECTRIC EYE SERVICE SIGNAL

Asking visitors to ring a bell for service at information centers is no longer acceptable, yet many areas are hard pressed to keep information desks in visitor centers manned eight hours a day. However, someone must be immediately available to give information or to start an AV program.

James E. Jones, chief, I&RM, and Manuel V. Goodman, maintenanceman, Dinosaur National Monument, devised a solution to the problem.

They connected a bell to the electric eye-counter circuit in the Headquarters Information Center. The bell, located near the offices, rings when someone enters the building.

Now, during the winter months when visitation is light and it would be a waste of manpower to keep someone tied to the information desk, the limited personnel can be working at other duties in the offices and yet be instantly available when the occasional visitor arrives.

AQUA STRETCHER

Now your present emergency stretcher or litter basket can be adapted for water use. A flotation kit is available from Water Safety Sales, 6265 W. Lakeshore Drive, Margate, Fla. 33063.

The flotation units, made of resilient, almost indestructible, closed cell polyethylene foam, snap on in seconds (see photo). They are ample to support any person, yet can be submerged easily to bring the stretcher up under the victim in the water. Total weight is 22 1/2 ounces.

Stretchers equipped with the flotation units and usable on water or land are also available. Called uni-stretcher, the frame and flotation can be removed from bed without moving the victim, a particular advantage in cases of spinal injury.



I will tell you a secret about the specialists. In their hearts they always carry the wistful memory of the rank amateur. They know too much.

—Freeman Tilden

PLASTIC SLIDE FILES UNSAFE FOR LONG-TERM STORAGE

Douglass Hubbard, former assistant director of the National Park Service, Harpers Ferry Center, has called attention to possible dangers to slides filed in transparent plastic notebook pages.

Checking with the Conservation-Analytical Laboratory of the Smithsonian Institution confirmed Doug's finding. Analysis brought the further information that the slide holders are made of a copolymer of vinyl chloride and vinyl acetate, and also confirmed the presence of chloride. As a polyvinylchloride slowly deteriorates, it liberates hydrochloric acid which evolves in small quantities and is carried by air movement. The plastic probably also contains a stabilizer which slows down the reactions producing the acid, but nevertheless, over time the acid will damage the slides.

It, therefore, appears that the convenient plastic notebook-like slide files are not a safe way to store those slides being preserved for long term record purposes. However, plastic files can be used for expendable slides in current use which will be discarded as the colors fade a bit. They will probably have served their useful life before acid from the plastic holders has any noticeable effect.

Another danger from the type of ring binder file is the possibility of scratching. This happens as the slides are being inserted or withdrawn, often occurring to adjacent slides. Transparent sleeves of a non-chloride plastic film (for example, KIMAC) slipped over the slides will protect them from such scratches.

TREE FINDERS

Devices which involve some action on the part of the park visitor often make the interpretation of park features more interesting to him, certainly more fun for kids. Such a device is the tree finder shown here.

A turntable mounted on a stationary pedestal has a sighter scope and, under a plexiglass window, interpretive material about the marked trees. The visitor looks through the sighting scope, then lines up the viewfinder with a marked tree. He looks through the plexiglass window and reads about the tree he has found. Around the circle he can "discover" and learn about seven or eight trees.

This and other action gadgets to involve people are available from Edith Shedd and Associates, Inc., Box 42265, Atlanta, Ga. 30311.

SPEAKING OF INTERPRETATION



Tree sighted through viewfinder



Visitor reads about tree he has found



Top removes with a special wrench



Interpretive cards are in proper location

EDUCATION & THE USE OF ENVIRONMENTAL STUDY AREAS

Available from the National Education Association is the first in a series entitled "New Developments in Teaching" sponsored by the Association of Classroom Teachers. This book, "Man and His Environment: An Introduction to Using Environmental Study Areas" has been published in cooperation with Project Man's Environment, American Association for Health, Physical Education and Recreation. It introduces a new interdisciplinary approach to environmental education at all school levels. Practical suggestions are provided for use of the environment—natural or man-made, park or urban setting, historical landmark or scenic site—to achieve an understanding of relationships between man and his environment.

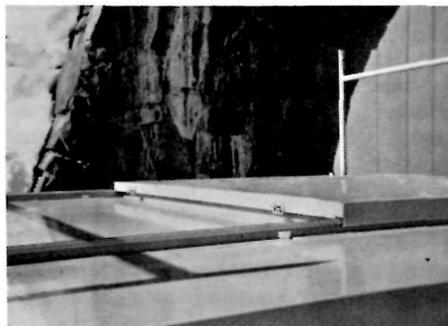
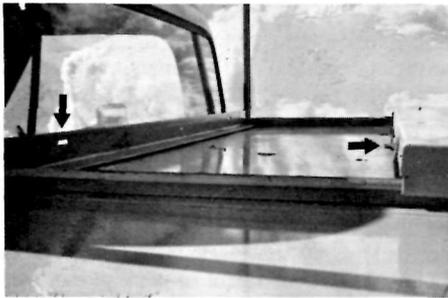
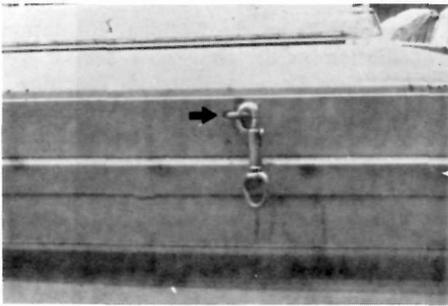
The approach is based upon use of the environmental study areas first developed and tested by the National Park Service. It should prove useful to park personnel, resource managers, and others who, as well as classroom teachers, are interested in initiating improved approaches to environmental education.

"Man and His Environment" provides: a brief look at the background of environmental study area programs; suggestions for selecting sites and planning programs; aids to identifying educational possibilities of a site and preparing related learning activities; sample class activities; specific suggestions for different content areas as springboards for further development; references.

Single copies of this 56-page book are \$1.75 (Stock No. 246-25118); discounts on quantities, 2-9 10%, 10 or more 20%. You may also obtain a free copy of the 1970-71 NEA Catalog: Publications and Audiovisual Materials (Stock No. 388-11722) from National Education Association, Publications, Sales Section 31, 1201 Sixteenth St., N.W., Washington, D.C. 20036.

SAFETY LOCK FOR SLIDING BOX TOP ON PICKUP

Maintenanceman John Caldwell, Mount Rainier National Park, has eliminated a safety hazard on their plumbing truck. Very often he has to haul materials which make it necessary to travel with the sliding cover of the utility box in the open (forward) position. In starting and stopping the pickup, the cover would slide back and forth because there was no way to lock it in the open position. In case of a sudden stop, it would have been very possible for the cover to come through the cab window at neck level of the driver and passenger. Not caring to ride with that threat of decapitation, John set about making sure it didn't happen. If you have a similar problem, here is what he did.



Bolt or weld a piece of 1 1/2" x 1 1/2" angle iron across the top front of the stationary part of the box, then put a U-bolt on either side of the front part of the sliding cover. Cut two slots in the angle iron that will match up with the U-bolts of the sliding cover, when the cover is in the forward position, the two U-bolts will protrude through the slots in the angle iron. Then by putting a snapswivel in each U-bolt the cover will be in a locked position, eliminating the hazard (see photos).

PLASTIC FIRE NOZZLE EVALUATION

Equip-Tips, publication of the U.S. Forest Service, Equipment Development Center, 444 E. Bonita Ave., San Dimas, Calif. 91773, evaluates a plastic fire nozzle manufactured by Wilson & Cousins Co., Ltd., Canada and available from U.S. authorized dealers.

The Wilco HN 1-L Model is a combination (barrel) type with shutoff, straight-stream, and adjustable fog-spray positions and patterns. Flow selections at 100 psi are 17 to 20 gpm (specify 1/2" spindle) and 33 to 35 gpm (specify 3/8" spindle). Base inlet size is one inch; available in iron pipe thread (I.P.T.) and National Standard thread (N.S.T.). The nozzle is made of bright orange Lexan (a trademark of



General Electric Company); is 4 1/2" long and weighs 8 ounces.

EVALUATION RESULTS: a rugged and reliable plastic nozzle, corrosion-proof except for the replaceable spindle and lock nut. Ideal for crew hose packs if properly matched with pump performance. Either performance range and spindle satisfactory for Tanker Models 50, 51, 56, or 60. The 17 to 20 gpm range (1/2" spindle) is appropriate for certain Model 20 and 30 Tankers, depending upon pump performance. Pump on Model 40 Tanker is more than adequate but, like Models 20 and 30, the tank capacity is limited. Nozzle would be mismatched on Model 10. The 17 to 20 gpm range spindle is satisfactory with the Gorman-Rupp 61-1/2 (FS) light weight portable pumper. The 33 to 35 gpm range spindle should be used with the Pacific Mark 3. Early problems with the 1" I.P.T. have been resolved. When fire is controlled and mop-up work underway with miserly flows, even the 17 to 20 gpm spindle is wasteful of water. Other nozzle types offering a range of tips for smaller flows were preferred by the evaluators. Weight and cost have been dramatically reduced over most commonly used nozzles.

The suggested list price for small, routine orders through authorized dealers in the United States is \$19.50 per nozzle. Combined orders may be directed to Pro-ser East, 425 Privet Road, Horsham, Pa. 19044. A 50% discount is available on such orders, e.g., \$9.75 per nozzle, F.O.B. Horsham. Order should specify: WILCO Lexan Nozzle, one-inch I.P. threads and specify either 1/2-inch spindle (17 to 20 gpm) or 3/8-inch spindle (33 to 35 gpm).

HILOADER PLATFORM SAVES \$\$\$ ON METAL SHORING JOB

The new lake at Hamilton County (Ohio) Park District's Miami Whitewater Forest required about 1200 feet of metal shoring to protect the shoreline in the vicinity of the boat harbor. This metal shoring, which comes in sections 18 inches wide by 7 feet long, was to be driven into the ground 6 to 6 1/2 feet. Estimates from contractors to



do the job using special equipment were approximately \$100 a minute. Edward Ruhl, superintendent of construction for the Park District found a solution which enabled the District to do the job itself and thereby save a great deal of money.

Ed had a steel platform built on the District's own 933 Hiloader (Caterpillar) on which a worker could stand to guide the rented 400-pound air hammer over the length of the piling. The Hiloader raised and lowered the platform to the height required as the work progressed.

Rental of the air hammer, compressor,

oiler, and hose at approximately \$175 a day was a tremendous cost saving over contractors' estimates.

The photographs, showing the platform and procedure, were taken at the start of the project which is now successfully completed.

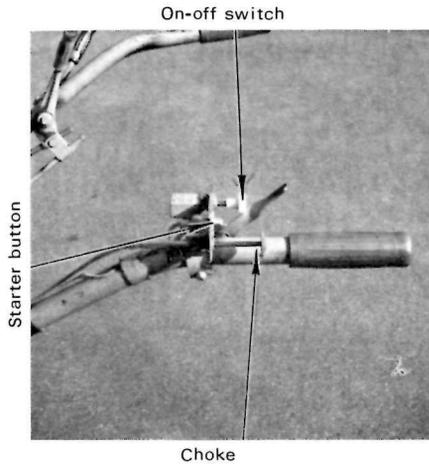
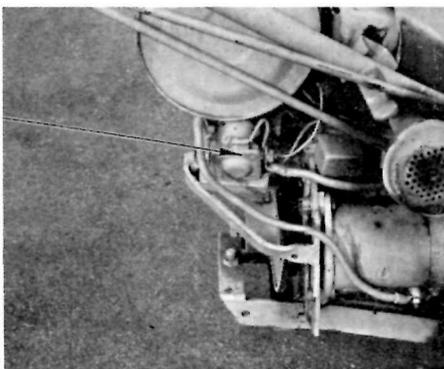


SAFETY CHANGE OF MOWER STARTER

The location of the starter button on Gravely mowers is a safety hazard since a foot could become entangled in the moving mechanism. Another hazard is the location near the muffler of the button which stops the motor. To eliminate these hazards, Auto Mechanic John B. Carter, Blue Ridge Parkway made the following modification.

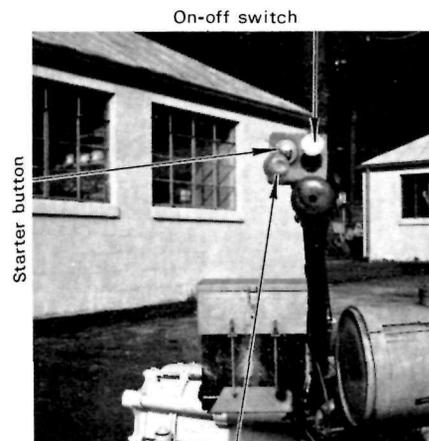
Install in a convenient location an automobile type 3-pole starter solenoid to replace the foot starter button. Connect the hot lead from the battery to the proper terminal with one of the other connections

Insulated solenoid starter switch



from the solenoid to the starter. The third position on the solenoid is for grounding, and this is used as a connection point to the new starter button.

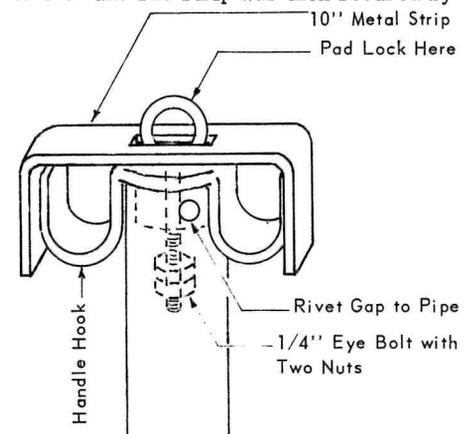
John chose the left handlebar near the operating controls as the best location and mounted there a small instrument panel containing the starter button, an on-off switch, and the choke. The on-off switch mounted on the panel is connected to the magneto ground to eliminate danger of the operator's burning himself when reaching close to the muffler to stop the motor with the button located on the magneto.



LOCK FOR GARBAGE CAN HOLDER

Have you lost any roadside garbage cans lately? Roads Foreman Delber L. Brunet, Rocky Mountain National Park and Shadow Mountain National Recreation Area, suggests a way to stop that kind of vandalism by two- and four-footed creatures.

The can holders at the parks have, on the post of each, a metal device with U-hooks (see photo A) over which a handle of a garbage can is placed. The device is held in place by an eye bolt. To prevent removal of the garbage can handle from the hook, Delber made a slot in the middle of a 1/4" x 2" x 10" metal strip large enough so that the strip could be placed over the eye bolt. He bent the ends of the strip so that it would fit down over the U-hooks and prevent removal of the handle of the can. The strip was then secured by



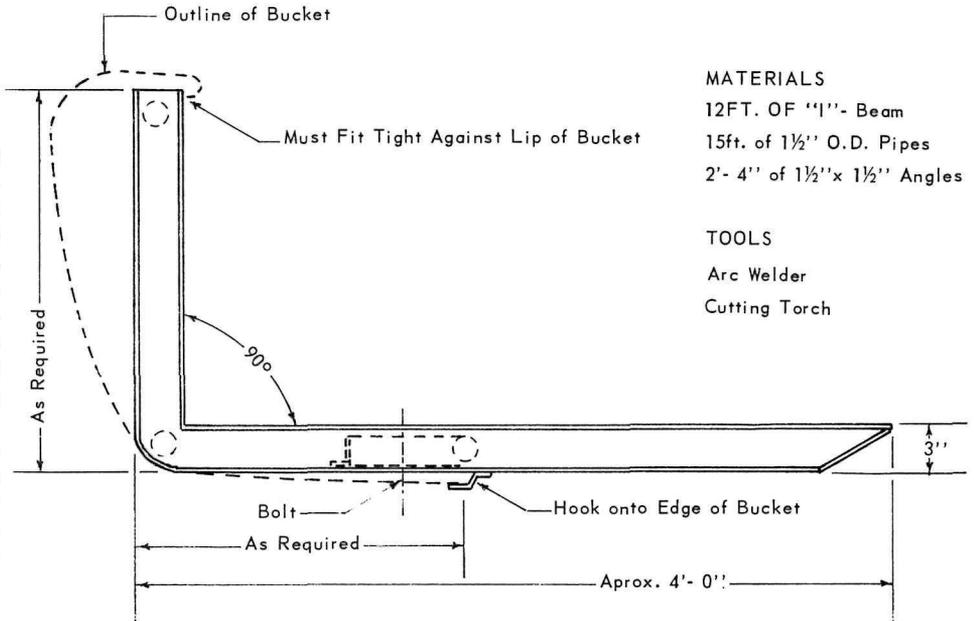
placing a padlock through the eye bolt. Cans can be easily removed by simply removing the padlock, but with the use of plastic bags which speed garbage collection so much, this is seldom necessary. A small chain, available from GSA (#4010-228-9943), from the padlock to the lid handle can be used to secure the lid.

The lock device can be made in 15 to 20 minutes at a cost of about a dollar for materials (replacement of one garbage can and lid of the type shown here costs \$6.60 through GSA).

FRONT-END SCOOP PLUS FORK LIFT

Useful as that farm tractor front-end scoop was at Fort Larned National Historic Site there were many things it couldn't do because of the size and shape limitations of the scoop. So, when those large, heavy, unwieldy jobs, like removing tree limbs, came along it was necessary either to cut the material into manageable sizes (a time-consuming and therefore expensive job), or, if this were not possible, to rent a fork-lift.

At very little cost, Foreman Russell S. Gilbert built the lifting device shown in the photos and sketch. It can be attached to (or removed from) the scoop by one man using two bolts to secure it. This is ac-

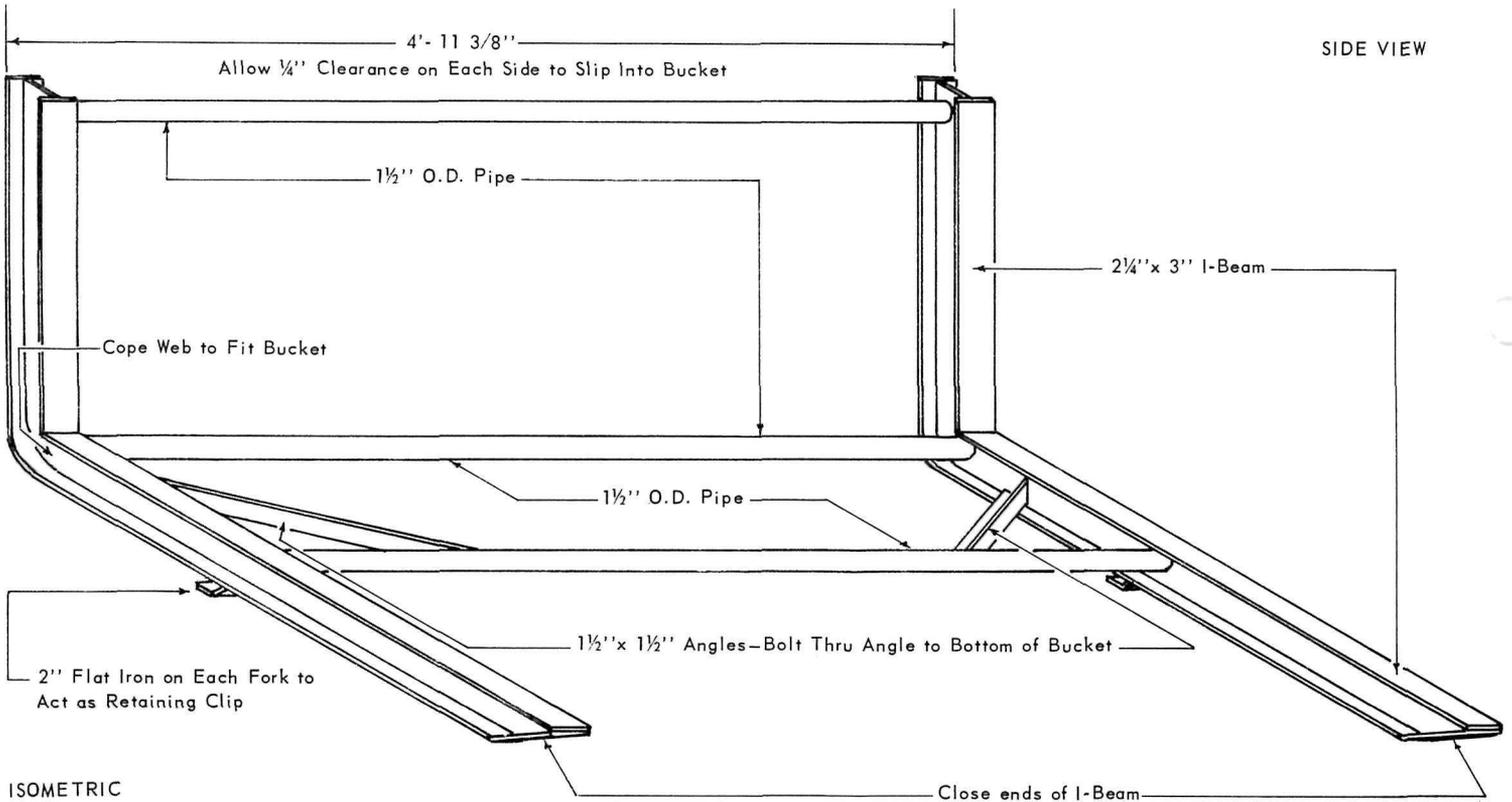


MATERIALS

- 12FT. OF "1"- Beam
- 15ft. of 1½" O.D. Pipes
- 2'- 4" of 1½"x 1½" Angles

TOOLS

- Arc Welder
- Cutting Torch



complished by use of lock-in pressure points in the scoop and the fitted base of the device (as shown in the sketch). Once assembled, the device can be used to lift, load, or transport objects too bulky or the wrong shape for the scoop. There is also a safety advantage in that there is no longer the need nor the temptation to move too heavy or dangerous objects by hand.

A definite plus for the fork-lift is its use to mount a platform, or scaffold, which can be extended 15 feet for painting and repair work. This is safer than most commercial scaffolds; the platform is wider, sturdier, and has no obstructions such as end irons.

IMPROVED LIFTING DEVICE FOR INCINERATOR DOORS

Every time the old motor-driven mechanical system for lifting the Yosemite incinerator doors broke down repairs cost about \$150, and the waiting period was from one to four months. Since the incinerator had to remain in operation during this period, a rope and pulley arrangement was rigged to open and close the huge doors manually. Operation of the temporary device was exceptionally hazardous, time consuming, back breaking, and had already resulted in injury to one operator.

The new device (see sketches), designed by Tolleman S. Gorham, Sr. foreman (Mixed Gang), Yosemite National Park, incorporates a hydraulic ram, cable, and basic leverage. It out-performs the old device in many ways. For example, it has a recovery factor which enables the operator to start, stop, or reverse the direction of travel of the door at any time or in any position, with a minimum of hesitation (the old device was slow moving and slow to react). It is mounted away from the surface of the furnace so that heat will not hamper its operation (the old one was mounted directly on the furnace). And it will withstand the constant stop-start operation that is required of it (the old device could not withstand the punishment given it even under normal operation).

The ram, which requires a very small amount of power, operates on a low pressure hydraulic system of 450 psi. which is built into the incinerator to operate the ash gates and grates. It is a double

PAVEMENT GUARD AGAINST FREEZE-THAW DAMAGE

Maintenance, Inc. says that a large percentage of damage to asphalt pavements from ice and snow can be prevented by filling cracks with their product, Lastek 33, a black rubberized liquid, or Lastek 34, a heavy calking material. Both remain elastic, adhering firmly to adjacent surfaces.

For overall pavement coating they recommend Jennite J-16. This is a slate

black liquid which seals the surface and prevents water penetration. It is said to be especially effective in areas where de-icing salts, calcium chloride and other ice-melting chemicals are used. "Jennited" surfaces they claim, are easier to clean of ice and snow; the black surface under snow or ice absorbs heat from the sun, lessening the degree of ice adherence. Ice on Jennite coated pavements is also said to thaw before that on adjacent uncoated surfaces.

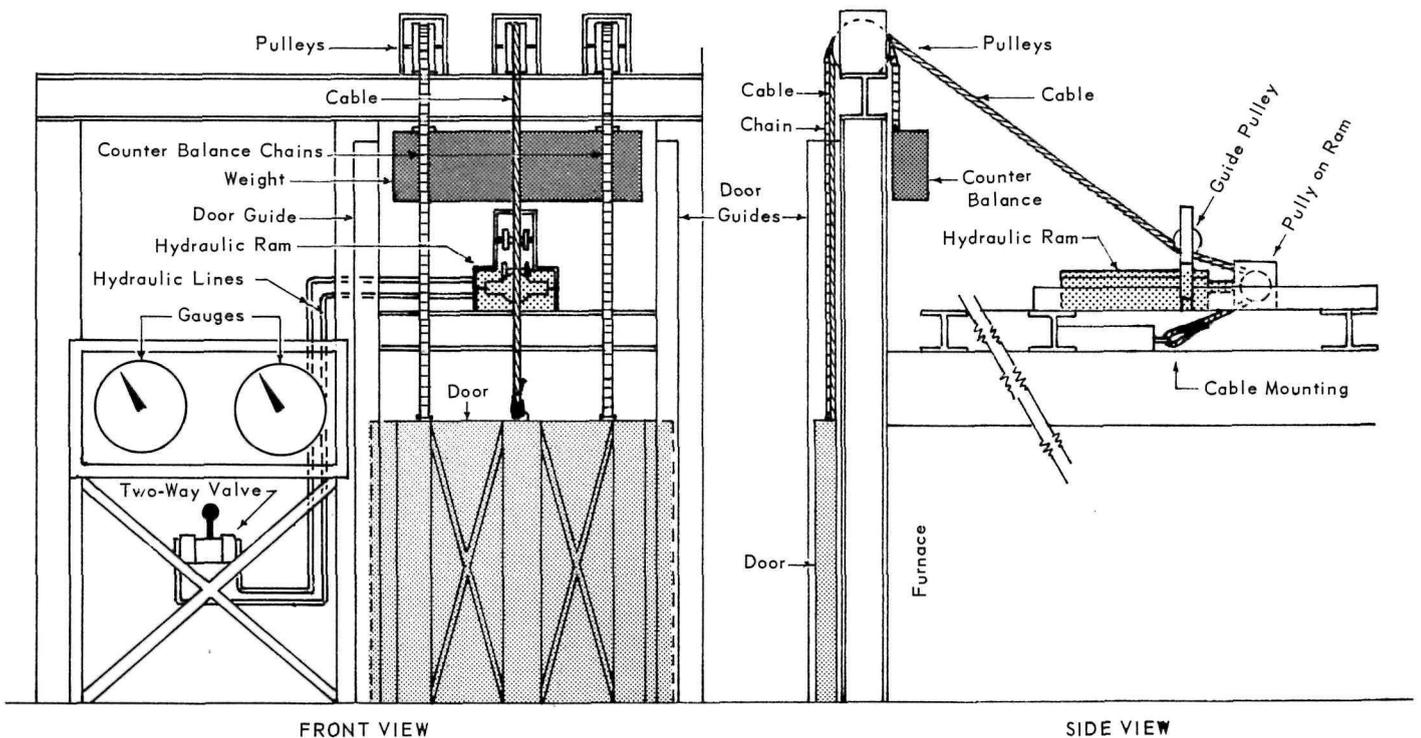
Another advantage claimed for Jennite J-16 use is protection against oxidation and the solvent action of gasoline and oil.

action ram which exerts a force of 5000 pounds and has a stroke of 24 inches. The furnace door is counter balanced and requires a force of 650 pounds to open it 48 inches, which is the size of the furnace opening. A cable and three pulleys are incorporated at a two to one ratio enabling the device to open the door the full 48 inches, with a force of 2500 pounds. Mounted securely to the building above the furnace and well out of the way, the device is still easily accessible for cleaning and inspection when needed.

The new lifting device cost about half what one repair job would have been on the old one, and it will outlast the old one many times over. Repairs should be minimal since the only foreseeable ones would be a pressure leak through a seal which would take thirty to forty-five minutes to repair at a cost of about 50 cents, or a frayed cable which is unlikely, but if it did occur would take forty-five to sixty minutes to replace at a cost of about \$2.00.



For winter pavement protection data, write Maintenance, Inc., Wooster, Ohio 44691. Ask for File WP.



SAFE SERVICING OF STORAGE TANKS

Servicing or inspection of gas storage tanks can be a hazardous undertaking, particularly if the means of access to the tanks is a rickety portable ladder. Snow, ice, or rain can make the tanks slippery as a greased pig, presenting still more problems to the supplier who has to scramble from base to valve.

Herbert L. Norton, temporary maintenance man at Navajo National Monument, faced with such a condition designed and constructed a permanent ladder and catwalk with maximum safety features. The supplier calls it the safest catwalk he has ever seen. Herb points out that it was constructed with "safety plus" in mind: the ladder is well anchored in cement; there is a handrail; and the catwalk is made of iron mesh, eliminating snow accumulation and providing secure footing even when icy. No welding or cutting of the tanks is necessary for the installation as the anchor provides the necessary rigidity.

The catwalk shown here was constructed for two 1,000-gallon LP gas tanks, but the design can be modified to accommodate as

many tanks as are necessary. The unit cost less than \$75, and as Herb noted, "The safety factor alone is worth the effort."

NEW WATER TREATMENT DEVICE

A new waste water treatment device that can be used in remote parks and in areas where the land won't perk has been designed by the Swedish inventor, Henrick Lind.

Called the Bioxial System, the device is a complete, automatic sewage treatment system for waste water from bathrooms and kitchens, including garbage disposal waste. It uses a full, three-step cleaning process: 1) Separation of solids, 2) Biochemical Oxygen Demand (BOD) treatment, and 3) Phosphate reduction.

Approved for use by Swedish health authorities, the outlet water from the system is so clean that it can be discharged directly into a recipient river or waterway. The device should receive U.S. approval soon, as its efficiency already exceeds Federal water quality standards from which all state standards are set.

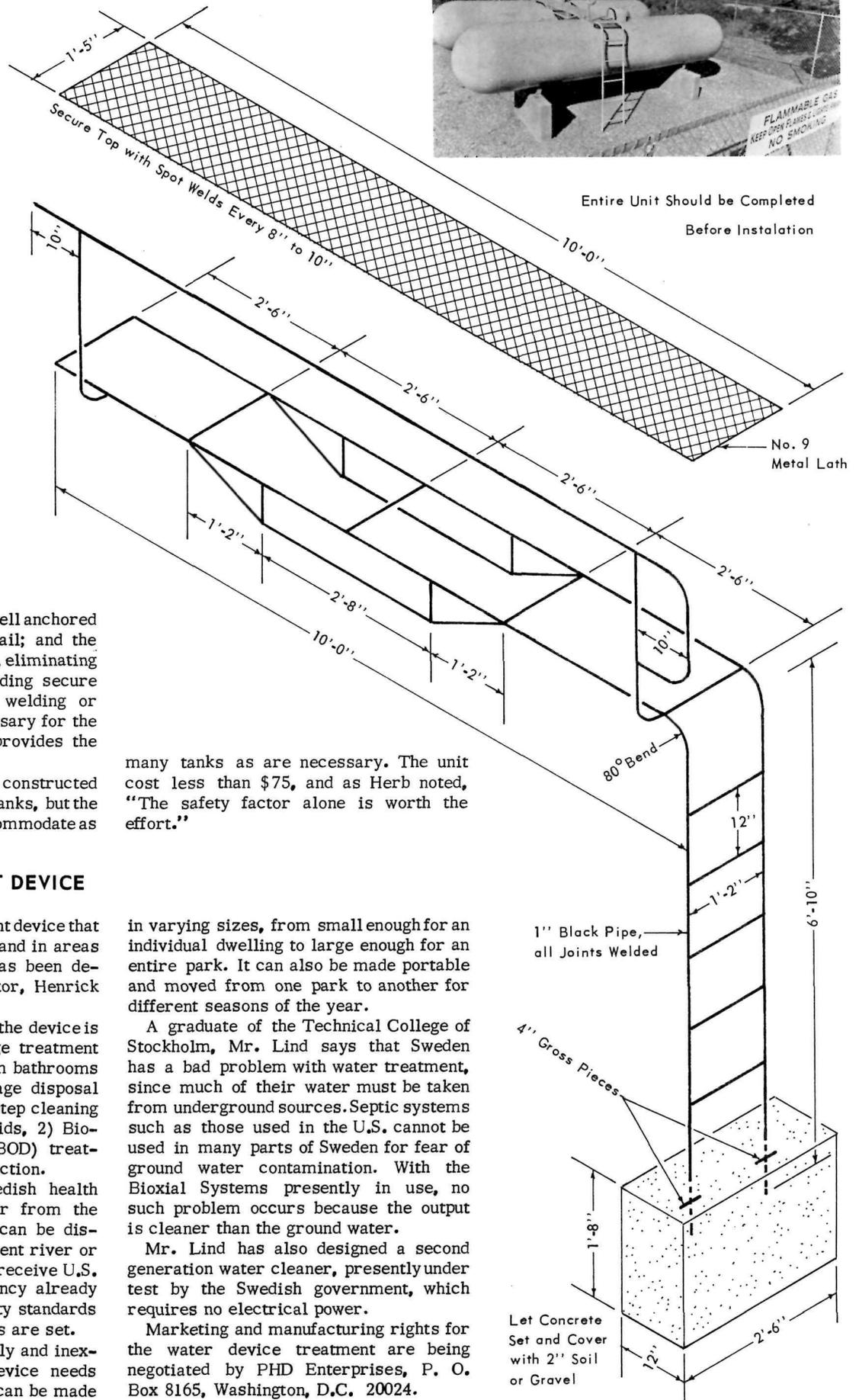
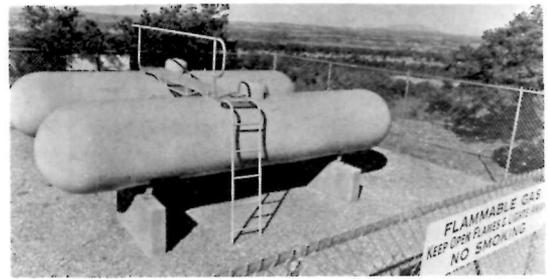
Moderately priced and easily and inexpensively maintained, the device needs just AC power to operate. It can be made

in varying sizes, from small enough for an individual dwelling to large enough for an entire park. It can also be made portable and moved from one park to another for different seasons of the year.

A graduate of the Technical College of Stockholm, Mr. Lind says that Sweden has a bad problem with water treatment, since much of their water must be taken from underground sources. Septic systems such as those used in the U.S. cannot be used in many parts of Sweden for fear of ground water contamination. With the Bioxial Systems presently in use, no such problem occurs because the output is cleaner than the ground water.

Mr. Lind has also designed a second generation water cleaner, presently under test by the Swedish government, which requires no electrical power.

Marketing and manufacturing rights for the water device treatment are being negotiated by PHD Enterprises, P. O. Box 8165, Washington, D.C. 20024.



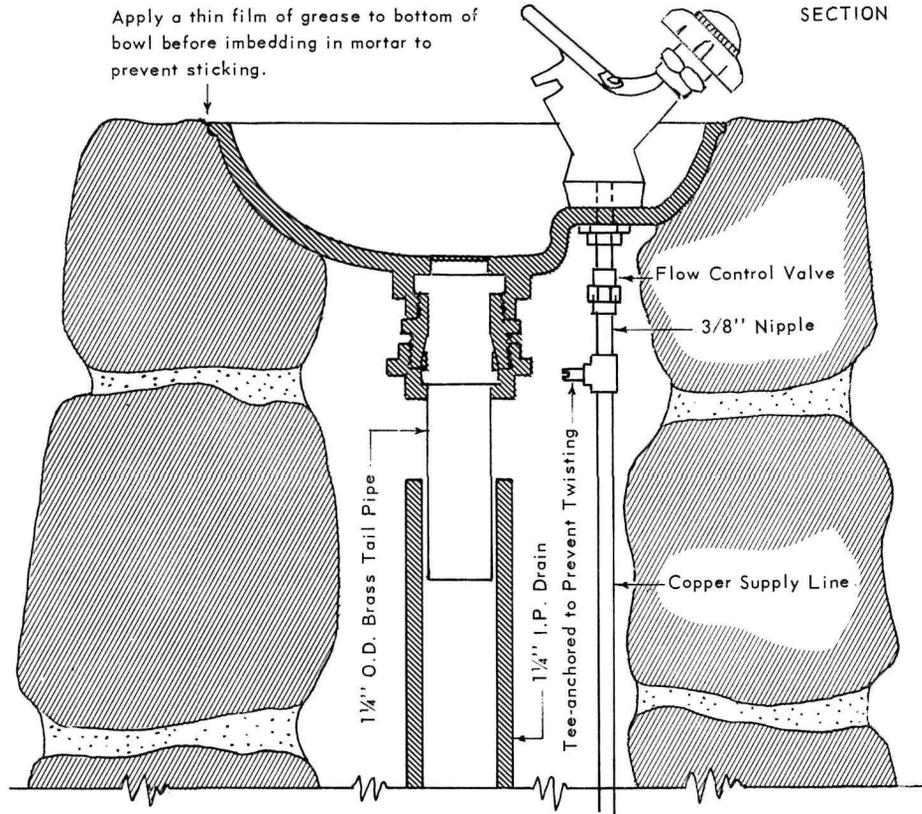
WATER FLOW CONTROL FOR DRINKING FOUNTAINS

Adjustments of drinking fountain bubbler stream flow can be eliminated by installation of a non-adjustable flow control valve in the water supply line. Regardless of variations in water supply pressure, the stream will never overshoot the bowl because the valve assures a constant, uniform flow. The valve suggested by Glen W. Richie, electronics technician and William H. Bowles, maintenanceman, Blue

nance and eliminates visitor complaints on that score.

The valve used on Blue Ridge Parkway is the Dole #D3-002 rated at 1/2 GPM with about 5 percent accuracy throughout the range of 15-125 pounds supply pressure. This valve is the correct size to use with Century #1100 Bubbler. Other valves are available from 1/4 GPM to 10 GPM. See sketches for installation details and instructions.

The manufacturer is Dole Valve Company, 6201 Oakton Street, Grove, Ill.



Ridge Parkway, is not the usual, expensive diaphragm type. It is a simple inexpensive non-adjustable unit which contains no moving parts. It costs \$2.75 as compared with \$10.46 for the other type.

The cost of installation is negligible if done during construction of the fountain or when other repairs are being made to supply line or cut-off valve box.

Without such a valve, bubbler heads require adjustment when campgrounds and picnic grounds are opened and usually several times during the season. Many of these adjustments are required as a result of tampering with exposed adjusting screws by park visitors. Since adjustments are unnecessary with the control valve installed, the adjusting screw on the bubbler head is either removed completely, or rendered inoperative by grinding off the screwdriver slot or filling the slot with epoxy cement.

Not only does installation of the control valve save money (an estimated \$5 per fountain per season at Parkway), but a properly operating drinking fountain creates a public impression of good maintenance

PROTECTION FOR BOATS AT DOCKS

Discarded escalator handrails protect boats against docking damage. Ed Fahey, senior park manager, Cherry Creek State (Colorado) Recreation Area makes the suggestion.

The handrails may be secured, smooth



side to the docks in various positions as shown in the photos. Nuts and bolts with lock washers do the holding job. This material will out-last firehose—might even outlast the dock, Ed says.

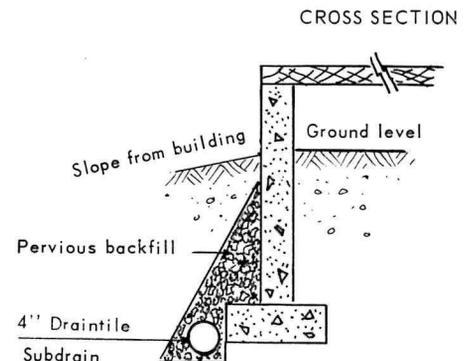
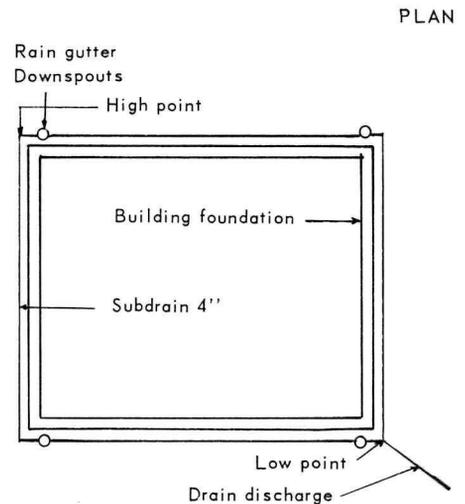
FRENCH DRAIN SYSTEM RESTORES BUILDING STABILITY

Deterioration of buildings due to settling foundations in moist soil, especially in those areas with bentonite soil (such as that at Badlands National Monument) can in many cases be halted by installation of a French drain system as shown in drawing. Moisture trapped around foundations if removed will stop soil movement, and foundations will remain stable.

If a building is located in low terrain, the drain system can be discharged through a sewer system, in which case a trap is necessary to prevent backflow from the sewer. (Where no suitable outlet for the drain line is available, pumping may be employed if economically feasible.)

Maintenance Foreman Mayo Zabriskie at Badlands, who made the suggestion, reports that installation of the French drain system has proven successful on two residential buildings, eliminating the need to jack and wedge floor joints to maintain level floors, and has also stopped walls and ceilings from breaking.

See the sketch for typical installation.



VEHICLE WINDOW SCREENS

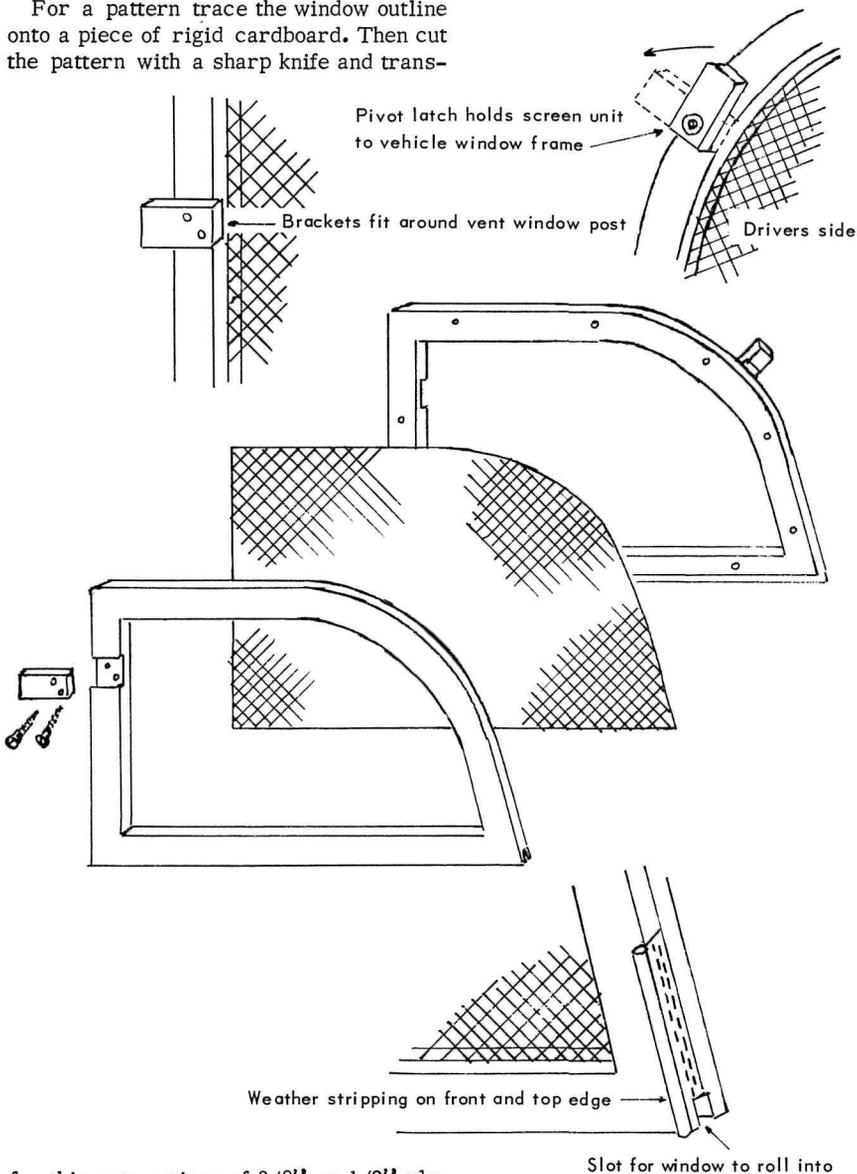
If you are in a semi-tropical climate and with no air conditioning in your patrol car, you may have a dual problem — heat and bugs. Flying insects which exist in abundance at Everglades National Park can make life mighty uncomfortable, not to mention dangerous should they bite or sting a driver at the wrong moment. Faced with the unpleasant alternatives — bugs or windows closed and sweltering, Stewart Cassidy, fire control aid, looked for and found a more comfortable alternative, namely screens for his vehicle.

For a pattern trace the window outline onto a piece of rigid cardboard. Then cut the pattern with a sharp knife and trans-



brace blocks on the upper forward part of the frame to straddle the metal post in the vehicle window. Fasten another opposite these on the inside that can swivel on and off the door frame. Tack the weather stripping around the outside top and side edges. Reinforce $3/4$ " thin rubber type with a $1/2$ " tubular edge is best, as it will act as molding to cover and seal any imperfections in cutting and to brace the frame and keep it from falling inward.

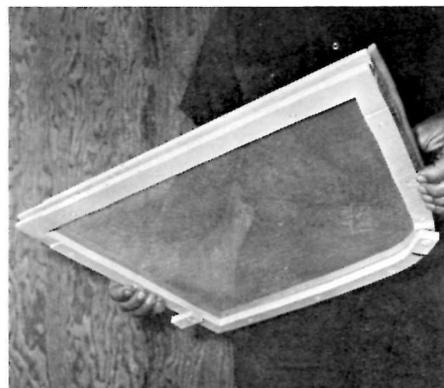
To install, place in vehicle window from outside, swivel the latch, roll up the window into the slot in the bottom and you have an insect-free car with maximum ventilation.



fer this onto a piece of $3/8$ " or $1/2$ " plywood. Clamp this to a second piece of plywood and cut both at the same time with a jig or coping saw. Smooth the rough edges and test for fit. This frame should be a little loose to allow for weather stripping to be added later. Draw the inner edge of the frame with a pencil and compass — about $1\ 1/4$ " wide on the top and sides, a little wider at the bottom. Make a groove along the bottom of the frame, using a power circular table saw, about $1/2$ " deep

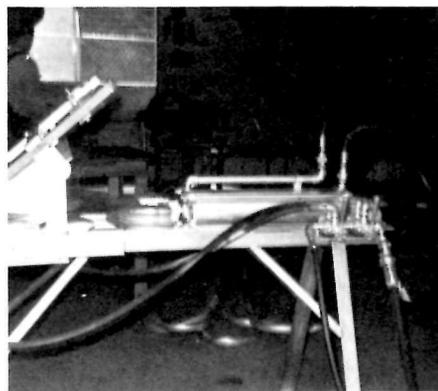
and $1/4$ " wide. This will help secure the completed frame when the window is rolled up into it. Cut the inner edge of the frame and round off all edges and corners.

Paint both halves with two coats of exterior paint. Tack a fitted piece of wire screen to the inside half of frame and fasten the two pieces together with about a dozen counter-sunk screws on the interior side of the frame. Fasten two small



IMPROVED HYDRAULIC PIPE BENDER

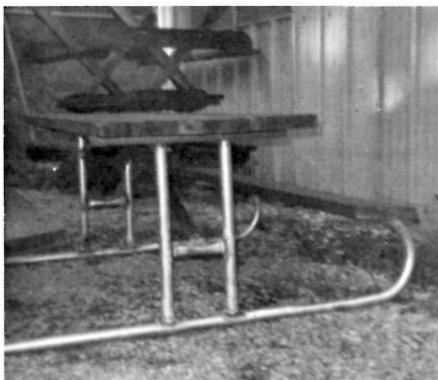
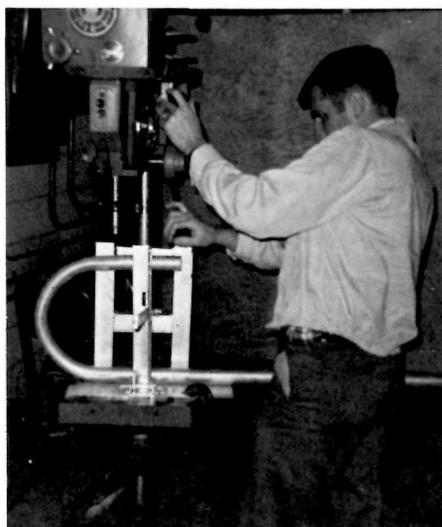
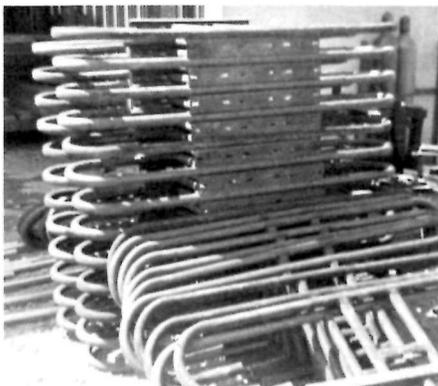
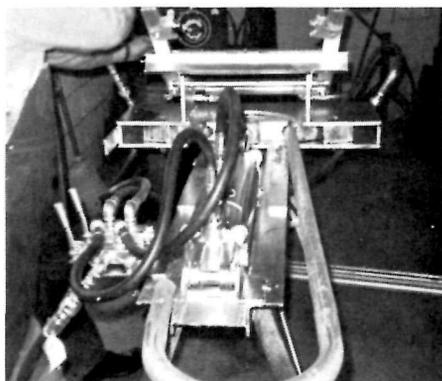
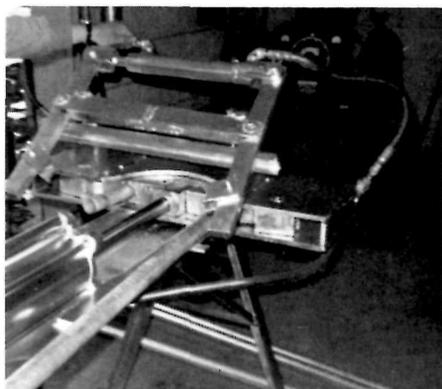
Construction of picnic tables at Cumberland Gap Job Corps CCC was hampered because the design called for two identical pipe bends, and pipe benders on the open market were developed for one bend only. In addition, the benders did not give the proper radius of bend. Sam P. Lacy, who at the time was enrollee work supervisor, designed and built a hydraulic pipe bender to bend and form $1\ 1/4$ " pipe for the tables.



Sam's pipe bender, shown in the photos, repeats the same bend on both ends of the pipe, and the identical bend can be repeated on any quantity of pipe. The equipment was used, together with the jigs shown in the pictures, as a vocational training aid in the welding shop.

Using the improved bender, the Job

Corps cost to make a table (not including labor) was about \$14 as compared with \$37 open market purchase price.



is prepared or served." Shell has petitioned to request a tolerance for the chemical in food, and this petition is presently being studied.

At present, the State of North Carolina does not allow the use of the strips there. In California, the County Health Departments of Alameda, Contra Costa, Kern, Madera, San Bernardino, and San Diego object to their use in food establishments, but the regulations are rarely enforced.

Should you want more information about this product, write to Dr. Louis F. Saylor, Director of Public Health, 2151 Berkeley Way, Berkeley, California 94704 or to Mr. Jerry Fielder, Director of Agriculture, State of California Department of Agriculture, 1220 N. Street, Sacramento, California 95814.

This item is based on information which appeared under the heading PESTS? OR "NO-PESTS"? in the winter issue of The Interpreter published by The Western Interpreters Association.

NEW LOOK SIGNS

Signs in the ParkSystem of Bakersfield, California, have a light, airy, see-through appearance, with minimum view obstruction. Bronze lettering on brown oak panels affixed to an expanded metal background announce the name of the area.

Park Superintendent William G. Brown sends the following construction and color information.

COLOR

- All metal Light tan
- Sign panels Dark brown with light bronze lettering
- Decal Gold on grey background, blue border



DESCRIPTION

- Height 55 inches (from top to concrete footing)
- Width at top 56 inches overall
- Frame 2 1/2 inch-O.D. Black square pipe
- Mesh Heavy expanded metal
- Sign panels Routed lettering on 2"x6" and 2"x4" oak
- Decal Official city seal affixed to metal backing

**KILL THE PESTS,
BUT SPARE THE PEOPLE**

Dichlorvos^R, also known as DDVP or Vapona^R, the major ingredient in Shell "No-Pest" insecticide strips, is dangerous for humans as well as for the intended insect victims. That is the verdict of the Ecology Action Education Institute in Berkeley, California. Vapona^R apparently interferes with production of a nerve enzyme known as cholinesterase in humans exposed in closed rooms.

As a result of this discovery, the U.S. Department of Agriculture has ruled that these words should appear on the box label: "Do not use in nurseries or rooms where infants, ill, or aged persons are confined." On September 11, 1969, USDA's Pesticide Division informed Shell that the following warning should also appear on the label: "Do not use in Kitchens, restaurants, or areas where food

LANTERN POST SPARES TREES

A 1969 summer survey conducted by the Missouri State Park Board revealed that 33 percent of all camping groups used

a lantern held by a nail driven into a tree. Not satisfied with a nail already in the tree put there by a previous camper, each newcomer seems to want to put in his own. The nails do considerable damage, but lantern heat does even more. It burns through the bark and cambium layer into the wood of the tree, causing an ugly scar and weakening its vigor.

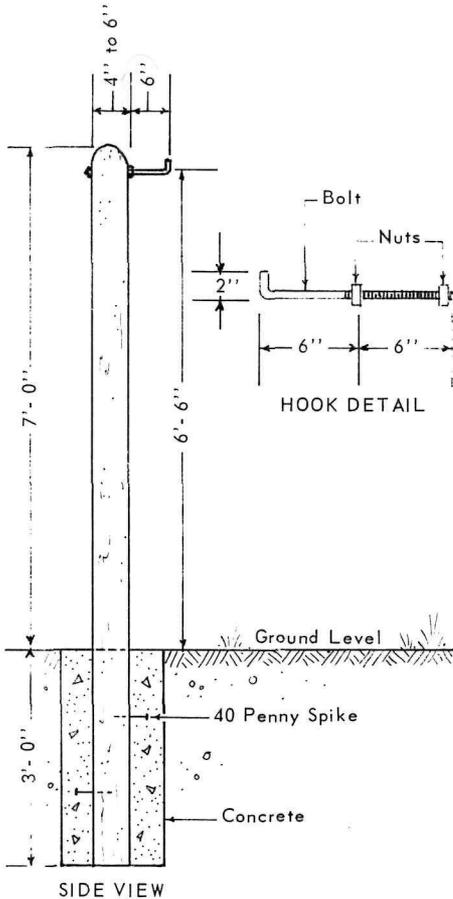
The survey showed that most lanterns were hung from five to seven feet above the ground, although some hung as high as ten to twelve.

Gale Trussell, chief planner, reports that this year the Missouri State Park Board will experiment with twelve lantern posts, like the one sketched here, in Area Two of the Lake of the Ozarks State Park campgrounds. If the experiment proves successful, or shows promise, with some minor modifications, the program will be expanded into other parks in 1971.

The design is simple and consists of a ten foot post sunk three feet in concrete, with a rod through the top for hanging the lantern. The post is high enough so that the lantern is out of reach of small children, but convenient for most adults. Placement at the campsite was chosen to give light to car and/or trailer, table, and grill (see location sketch). Cost is low, about \$5 to \$8 each, and construction is easy.

This is another effort by the Missouri Park Board to provide quality campsites while preserving the natural resource.

In viewing natural objects and scenes, the total amount we discern is nearly nothing compared with what there is to see. —Freeman Tilden



PADLOCK PROTECTION

Breaking and cutting padlocks in Cherry Creek Recreation Area (Colorado) has not recurred since Ed Fahey, senior park manager, devised this means of thwarting vandals (see photos).

The device is a piece of four-inch pipe six inches long with a slot cut into it big



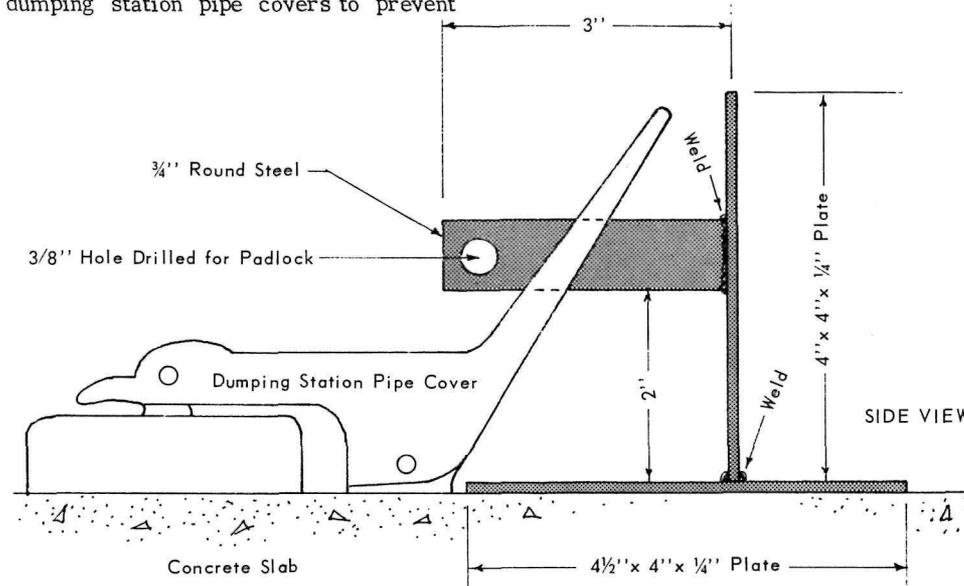
enough to allow the end of a length of chain to slip through. This is welded to the gate post. The padlock is put into the ends of the chain inside the pipe, making it difficult, if not impossible, to use a tool or instrument of any kind to break or cut it.

SANITATION DUMPING STATION LOCK

Robert Bacon, assistant park supervisor, Brimley State Park (Michigan), has devised a method for locking sanitation dumping station pipe covers to prevent

dumping after sewage pumps have been shut off. The sketch gives construction details.

H. B. Guillaume, Michigan Department of Natural Resources, forwarded the information to GRIST.



THE SURVIVAL KIT



G. O. Snyder