

NATIONAL PARK SERVICE



7his publication is devoted to the reporting of time- and money-saving ideas originated by employees of the National Park Service. Each item herein has been rewarded through a cash payment

to the originator and each is intended for broad application wherever possible. Extended usage of this material, strongly encouraged, makes awarded ideas of ever-greater value to the Service.
-Ed.

FLEXIBLE PIPE DIRECTS DEADLY EXHAUST FUMES

In shops not equipped with exhaust blower systems to carry off engine fumes, most of the danger and odor from such fumes can be carried off by a blowerless pipe system vented to the outdoors. Jose Aranguena, Heavy Duty Mechanic at Yosemite National Park, suggests (NPSW 63-26) that there be a large overhead pipe (probably from galvanized stovepipe or air conditioning duct sections) with connections to flexible hoses running to the floor or bench.

A flexible hose is connected to the exhaust pipe of the engine under test, and most of the fumes then pass out through the pipe system even without any costly blower system.

PARKWAY SAFETY RECORD REGISTER

Colored lights are a constant safety reminder to Blue Ridge Parkway personnel. The attractive safety record register shown in the photo is the award-winning idea of Harold J. Stout and Joseph Windsor, Blue Ridge Parkway, Asheville District (NPS SE/RE 63-16). It was tried out in in the Gillespie Gap Maintenance Area and later adopted for use on the Parkway.

Green light--As long as the area is injury-free the green light burns.

Amber light--An injury occurs (a non-disabling one). Off goes the green light, and the amber light is turned on instead, to burn the rest of the month in which the injury occurs.

Red light----If an accident disables an employee--the green or amber light is turned off and the red blinker light shines for the rest of the month, or until the employee returns to work. If the accident is a fatal one, the red light blinks for the remainder of the year.

Accident days are black days, and as you see on the calendar in the photo, any date on which an accident occurs is covered with a black metal square. Accident days are cleared from the calendar at the end of the month, but in the lower right corner the number of accidents which have occurred from the first of the year is recorded.

Harold says that the register creates a competitive spirit among employee groups to improve their safety records.

PROMOTING VISITOR SAFETY

Boating safety, better attention to fire hazards, and reduction in litter are all promoted by the award-winning safety pamphlet written by James B. Thompson, Park Ranger, and distributed in Shadow Mountain National Recreation Area, Colorado (NPS M 63-12).

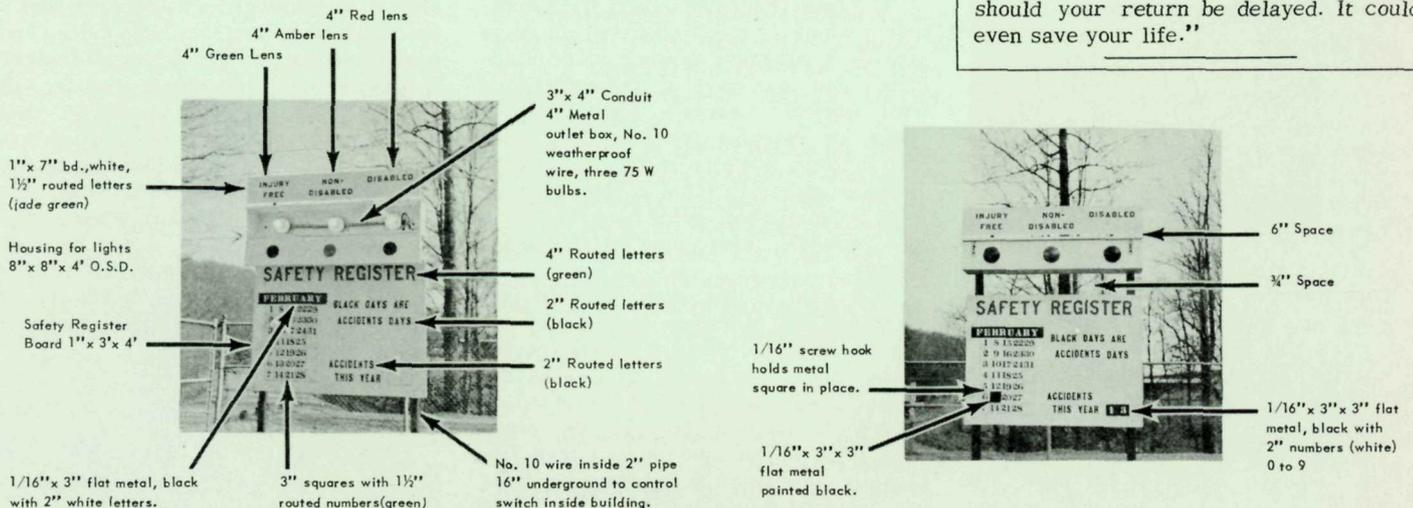
The pamphlet, printed in green on white paper, carries hints on how to handle a small boat in a storm, what the marine "rules of the road" are and the penalties for violating them, what to take along on every water trip, and other hints, all written in simple language. Jim reports that the first edition of the pamphlet was financed by the Rocky Mountain Nature Association and copies cost 2-1/4¢ each. They are distributed free.

The easy-to-understand writing in the pamphlet is illustrated by the following section addressed to visitors about to take out a boat:

- "TELL SOMEONE;
- "Where are you going?
- "When you expect to return.
- "Leave word with:

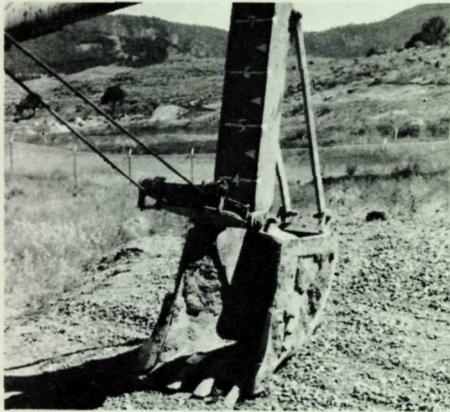
- Your family
- The Rangers
- Concessioner

"The above may be very important should your return be delayed. It could even save your life."



BACK HOE CARRIES ITS OWN YARDSTICK

The "guess-and-by-golly" method of figuring depth of cut for a ditch as used by some back hoe operators can result in a ditch where the grade is wrong and the water won't flow. So usually the operator must wait for frequent interruptions by a surveyor to check grade as the cut progresses. Frank Holst, an Operator General, in Yellowstone National Park has found a way to mark the back hoe digging arm so that after the grade line is laid out the experienced operator can judge his distances so accurately that for many ditch cutting jobs there is no need for constant re-checks by the surveyor.



As the picture shows, Frank's award winning suggestion (NPS/M 63-36) is to paint accurate foot marks along the arm of the back hoe, clearly visible to the operator. He says that with this marked arm he can make cuts 9 feet deep along a 100 foot ditch, coming within 2 or 3 inches of perfect accuracy.

SIGN DOES DOUBLE DUTY

Frederick V. Vest's idea for a double duty reversible sign has won him an award (NPS/RO 63-25) and made it easier for



motorists approaching an entrance of Shoshone National Park to see at a glance whether entrance booths are open or closed. Fred, who is a District Park Ranger, suggested the material-saving two-faced signs shown in the accompanying photographs.

The signs, pictured in use at the Panorama Entrance Station to the park, are made in 32 by 44-inch size with two and three-inch letters and numbers routed into

the redwood backing and painted bright yellow. Signs are attached to the entrance side of each booth by means of two U-



shaped strap iron brackets at the bottom and a spring-loaded latch at the center of the top to permit quick and easy removal or reversal.

NO MUD IN YOUR EYE

If you've ever had mud or gravel splattered up on your car by the wheels of a truck or tractor moving ahead of you on an unsurfaced road, you'll appreciate the suggestion (NPS 2 63-3) by James T. Stewart, Engineering Technician, Yellowstone National Park, that all park vehicles without rear fenders be equipped with mud flaps. The suggestion has already been adopted as standard practice in Yellowstone and would be good practice in all parks.

Gravel thrown up by unprotected rear wheels can damage the finish of a car following behind. Furthermore, mud so thrown up can quickly cover a windshield, causing a serious safety hazard.

TRAIL WORK RECORD AT A GLANCE

Seeing how trail work is progressing from an office chair can be a simple matter when the visual work summary system used at Lassen Volcanic National Park, California, is adopted. Forester George S. Briggs won an award for devising it (NPS SW 63-28).

Two basic aids are used:

1. A form (Foreman's Daily Work Summary) which is comprehensive enough to provide a summary to work accomplishments and man-days of each section of trail worked. George's form provides space for entering the following: date, trail number, workers' names, man hours, distance walked, portion of trail worked; work accomplished, water bars, log, rock, logs removed, other; men on sick leave (name).

2. A map of the area of sufficient scale and with minimum unnecessary detail on which to make a visual record.

The map is prepared at Lassen by obtaining film negatives of the standard quadrangle maps of the area. Two negatives must be obtained for each map (because in color printing, separate negatives are required for each differently colored map feature). One negative shows roads,

area boundaries, and trails, another shows hydrographic features. From a combination of these two negatives a "Mylar" film positive, enlarged to a scale of 2 inches to the mile is made, using an Ozalid or similar "white print" process. The work can be done by most engineering or forestry consulting firms of any size, for about 50¢ to \$1.00 per 120,000 acre map area. The result is a map of good workable scale containing only information pertinent to the purpose. Trail work is summarized on the map by use of a key. (See sketch)

KEY TO TRAIL WORK MAP

	Dixon #
Cleared of logs and other material blocking trailway	Brown 343
Extensive maintenance	Bright Red 321
Relocation	Green 354
Snow Removal	Yellow Ochre 324½

△ # Rock Water Bars (# Installed)

○ # Log Water Bars (# Installed)

▬ # Logs Removed (# To right of symbol)

X Times Trail Worked (# To left of symbol)

✱ Trail Bridges Constructed

The two records provide an up to date status record and view of trail conditions, making it possible to —

- provide current information and advice to trail riders, hikers, and others on proposed trips
- compare the actual trail work accomplishment with the scheduled program.
- spot areas which have been difficult to work and which held up work crews.

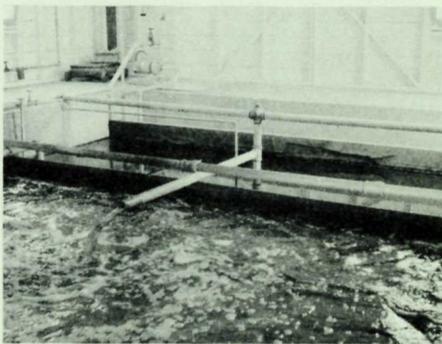
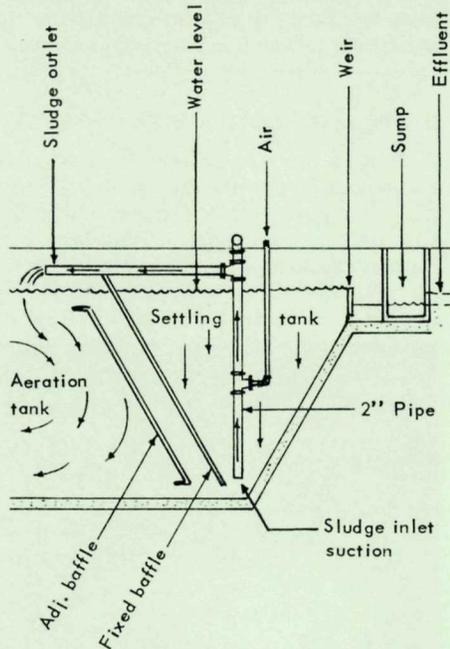
The two records are also a valuable aid in annual planning and scheduling of trail work. Examination of the last year's map clearly shows which trails were not worked and which therefore should be given a high priority on the current schedule. Analysis of program accomplishment is easier with the work, by type and amount for each trail, clearly recorded. Sections of trail which consume excessive amounts of time and equipment to maintain show up, providing a basis for deciding whether they are worth continuing or should be abandoned or relocated; no unworked trail or section of trail can go unnoticed; and the record provides a justifiable basis for maintenance fund requests.

Though we travel the world over to find the beautiful, we must carry it with us or we find it not.

—Ralph Waldo Emerson

AIR LINE SOLVES SLUDGE PROBLEM

Sludge clogged up operations in a sewage disposal plant and even caused froth spray pump bearings to burn out twice before Wilbur Stephenson, Foreman III B&U, C&M of Sequoia and Kings Canyon National Parks, worked out his award-winning suggestion (NPSW 63-17) for an air lift sludge return.



As the sketch shows, the sludge return consists of a two-inch pipe fitted with an air line near the water surface and running from six inches above the bottom of the settling tank to above the surface where it discharges into the aeration tank. The half-inch airline causes the suction action which keeps the sludge moving up the return pipe and out for further aeration.

As the plant was originally constructed (like many others), a baffle with a slot between aeration and settling tanks was supposed to allow the moving sludge to pass from settling phase into the aeration phase. However, the sludge did not return in sufficient volume to give good circulation. Thus undigested sludge collected and built up continually, clogging the screen of the froth spray pump (not shown in sketch). When the screen clogged, the pump ran dry and caused bearings to burn out. The sludge build-up also created odors in and around the plant and caused a murky effluent.

With the air lift line, there is sufficient circulation and aeration so that the effluent becomes quite clear, very little solid matter finding its way into it. Furthermore, much cleaning time, plus time and materials for pump repairs, are saved by having the air lift sludge line in operation.

ORGANIZATION CAMP SPACE INVENTORY ORGANIZER

Out at Yosemite National Park they kept the inventory of Organization Camp space by writing with a grease pencil on glass lid over a map of the site. The pencil was large, the space small, and crowding resulted in illegible writing. Soon the space ran out altogether and the information was scribbled on scraps of paper which dangled from a clip board at the bottom of the map. When an inquiry came in about an organization, a frantic search began among the scribbles and scraps.

But Ranger Steve Goland's suggestion (NPSW-63-16) put an end to that chaotic condition. A new Organization Camp area map was drawn, secured to a plywood board and covered with transparent acetate. A screw hook was placed at each section. Tags were cut uniformly 1-5/8 x 3 inches, and the following headings and spaces were placed on them: organization name, number in group, date of arrival, date of leaving, section assigned. Each tag has a hole in the top so that after it has been made up, directly from the form filled out by the organization or from a list made by the Organization Camp Ranger, it may be hung on the map at the appropriate section.

A form which has columns to hold the same facts is attached to the clipboard at the bottom of the map so that by glancing quickly down the form any organization may be located without searching through the tags.

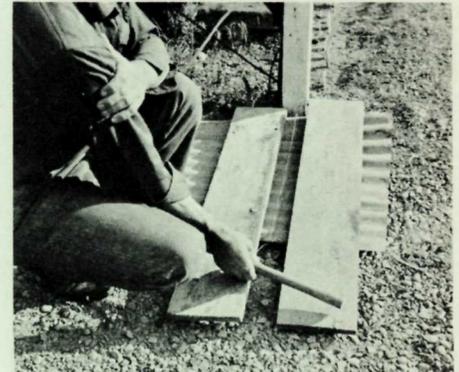
SIMPLE CUTTER FOR CORRUGATED METAL

Corrugated metal or sheet metal roofing can be cut easily with a safe new system devised by Woodrow Adair, Maintenance Man at Black Canyon National Monument. The award-winning method (NPSM-63-14) uses very simple materials—a piece of wire, a length of old shovel handle, and a couple of boards—but cuts quickly and accurately.

The length of shovel handle (or similar tough wood as in a hammer or axe handle) should be about one foot long. The wire—piano wire, or new baling wire—should be from three to four and a half feet long, depending upon the length of cut to be made. The boards should be approximately 1-inch by 8 inches by 4 feet, but can be wider and thicker if desired.

Using Woody's system, you fasten the wire close to the ground to such an object as a fence post or the side of a building. The other end of the wire is fastened to the center of your length of shovel handle. After drawing a chalk line on the metal,

you lay the metal down on top of the wire exactly over the line. You then place the two boards along each side of the line to be cut, leaving a cutting slot between. You stand on the boards, pull up on the handle, and the cut is quickly made. The photographs show how it's done.



One special advantage of this method is that the cut is made with your hands a long way from the jagged metal edges. If you've ever cut your hands when using tin snips, you'll be glad to stand clear and use the Adair system.

Although Woody suggested the method only for corrugated metal, we tried it on flat metal roofing with good results. However, on flat metal your guide boards should be especially close to the cutting line or there will be a tendency for the metal to bend upward considerably, requiring that it be pressed or hammered down after the cut is completed.

WEATHERPROOF FIRE EXTINGUISHER TAG

Ever been embarrassed by having a visiting fireman (Park Service VIP, that is) inspect your fire extinguisher tags and find them so weathered that they cannot be read? You can remedy that by adopting the suggestion of Raymond J. Geerdes, Park Ranger, Hawaii Volcanoes National Park (NPSW-63-27). Ray has discovered that plastic tags will withstand every weather test. The tags are available in white, green and some other colors. While they are particularly useful for a fire extinguisher servicing record, they can serve many other purposes, for they come blank, and the lines and wording can be drawn and written in with waterproof ink. When used for servicing data, the required information can be written on at the proper time with a weatherproof pencil.

IMPROVED BEAR TRAP TRAILER

Lemely E. Oates, Mechanic at Yellowstone National Park took a little time to study a problem, came up with a good solution in the form of a better product, and thereby won an award for himself. (NPS/M-63-8 Bear Trap Design.)

Made of a length of 36-inch corrugated steel culvert mounted on a trailer chassis, this trap employs a new principle of release in the form of a lever at the front with a rod extending along the side of the body to the door at the rear. The door swings upward to release Mr. Bear when the lever is pushed outward by someone standing on a platform mounted above the trailer tongue.



As Lem points out, the operator does not have to stand on the top of the trap to open the rear door as in earlier models. When releasing a grizzly bear, he advises that the truck pulling the trailer be moving forward as the door is opened. (We'll go along with that idea. —Ed.) This would put more real estate between said grizzly and said lever-pusher—a most desirable, strategic maneuver!



When the trap has been baited inside at the front, the rear door is held upward and open by means of a long steel pin extending back from a hinged lever which fits

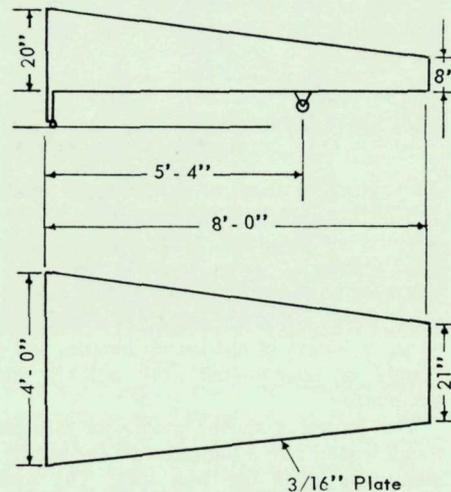
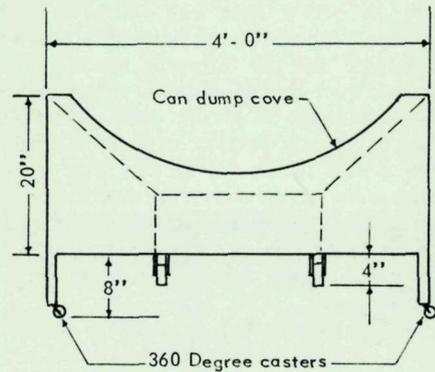
down into the trap, and from which the bait is suspended. A tug on the bait pulls the pin forward and out of a hole in the edge of the rear door, which then drops by its own weight. In transit, the door is kept locked by this same pin which fits into another hole in the door.

The door is made of steel plate into which an opening has been cut. Steel bar grill is welded across this opening as well as across the front end of the trap at the platform. Lem, also an accomplished welder, is shown on the platform holding the release lever.

Sections of corrugated pipe have been cut to make fenders over the wheels of the trailer.

GARBAGE FEEDER FOR INCINERATOR

Faster, cleaner, less dangerous feeding of garbage and trash into an incinerator is made possible by a moveable chute designed by Henry Bewley, Harold Scott and William Stroh of Sequoia and Kings Canyon National Parks, California (NPS W 63-18).



Until the new device was put into service, the practice was to dump garbage cans on the floor in front of the incinerator doors. Then the garbage was shoveled into the burning area, and the man shoveling was exposed to intense heat and to the danger of explosions from spray cans or bullets.

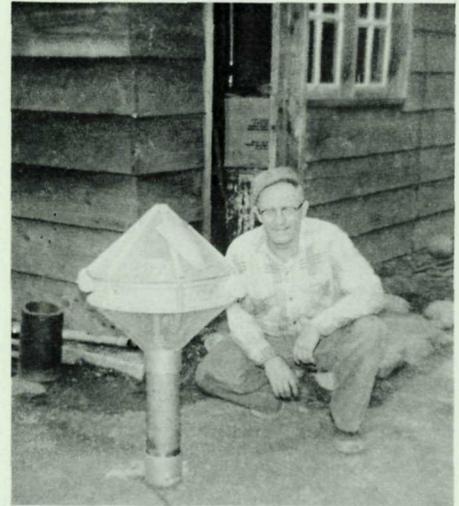
The chute is constructed of 3/16-inch boiler plate with welded seams. It is 8 feet long, 4 feet wide at the front and 2 feet wide at the burner end. The wide end,

which has a curved notch in which the side of a garbage can can rest while dumping, is 8 inches off the floor, and the feeding end 4 inches from the floor. The whole device is on heavy legs equipped with 360-degree casters.

The garbage after being dumped into the chute is pushed through the incinerator door by a long hoe-like pusher. Because of the small size of the burner end of the chute, reduction in size of the incinerator door has been possible, cutting down on the flash heat to which an attendant is exposed.

REVOLVING WATER INTAKE SCREEN

Using a discarded wire wheel from an automobile to provide the revolving frame and its spindle as the fixed mounting, Charles A. Martindale, Plumber, Mt. Rainier National Park, has come up with an award winning self cleaning intake screen for waterheads (NPS W 63-24).



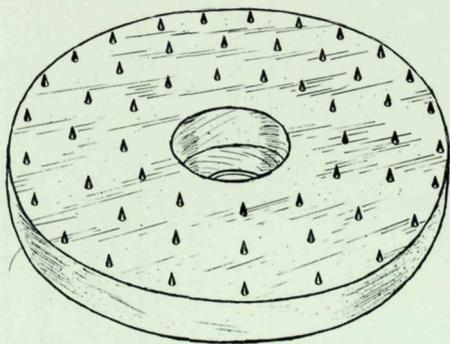
As the photograph shows, Chuck attached small metal paddles along the outer rim of the wheel, so that flowing water would cause it to turn. As the screen with its conical frame is attached to the wheel, any debris which accumulates on the surface will be washed away by the movement of wheel and water, making unnecessary most of those usual frequent trips to clean things off the surface of the ordinary intake screen. At Mt. Rainier, cleaning used to require 60 trips a season, but 8 are enough now.

NO SLIPS WITH RUBBER PIPS

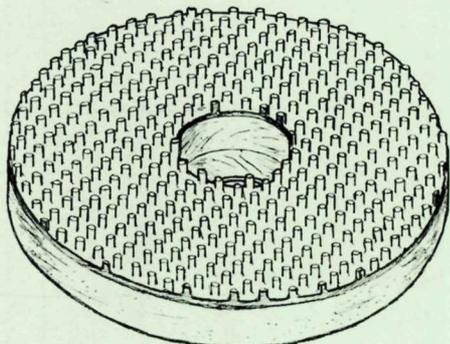
An improvement in the electric floor scrubbing machine used at Isle Royale National Park has won an award (NPS NE-63-9) for William D. Newman, Janitor.

Bill found that replacement of the wooden drive unit with its metal pips was frequently necessary, at a cost of \$20.50 each time. This became necessary because the metal pips get bent easily, and also sometimes wear through the scrubbing pad and get ground down on the floor surface. Bent pips did not hold the scrubbing pads securely, allowing them to slip off, causing work stoppages. Damage to the floors re-

sulted when this happened, as scratches would be made by the pips before the machine could be stopped.



Bottom of wooded drive unit showing metal pips



Bottom of wooded drive unit with rubber matting

Using a circular piece cut out of a rubber floor mat and cemented to the bottom of the wooden drive unit (on which all metal pips had been worn down or filed flat), Bill got a much more satisfactory work unit. The rubber pips on the floor matting hold scrubbing pads better than the metal pips did, and if there is any accidental slippage, the rubber does not damage the floor surface anyway.

STEAM THAWS FROZEN WATER AND SEWER LINES

That repeat winner of awards, Mayo O. Zabriskie, Maintenance Foreman at Colorado National Monument did it again recently with an improved system for steam-thawing frozen water and sewer lines (NPS 2-63-35). Like other foremen in parks all over the country, he had discovered that it is almost impossible to thaw out some types of lines which do not conduct electricity at all, while some conduct it only from joint to joint.

Using a portable fire pump and steam cleaner, Mayo uses quarter-inch black pipe connected to the discharge from the steam cleaner. This quarter-inch pipe is inserted into the line to be thawed, keeping the force of hot water and steam directly on the ice in the frozen lines. Lengths of quarter-inch pipe are added to the line as thawing progresses. It is estimated that about 200 feet can be thawed in one run upgrade and as much as 500 feet downgrade, if grades are slight.

Mayo found that a gear shift knob, drilled clear through, makes a very nice guide for

the head of the quarter-inch steam line.

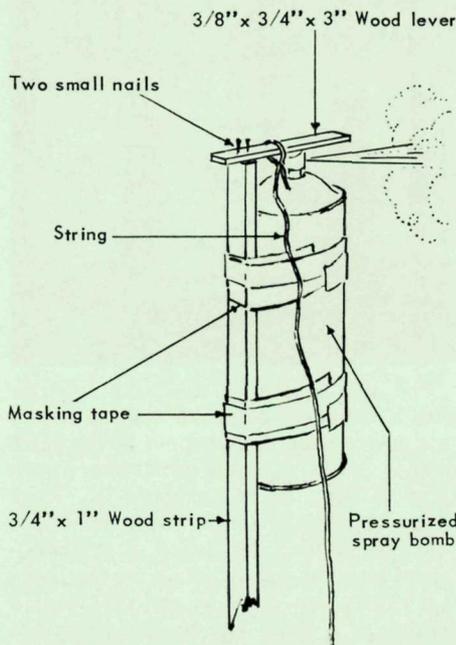
Unless the line which is frozen has been previously provided with access plates or plugs, it is necessary to cut holes in the line at intervals to allow the quarter-inch steam line to be inserted. The Superintendent at Colorado National Monument reports that to work on 6-inch cast iron pipe, access is provided by cutting an 8-inch hole 3/4 inch wide in the top of the pipe. After thawing, each such hole must be repaired, and at Colorado National Monument this is done as follows:

- (a) drilling and tapping a series of 1/4-inch holes for 1/4-inch bolt studs,
- (b) treating the holes and inside of pipe line where glass liner has been broken with a good mastic to prevent rusting,
- (c) attach matching plate of 1/8-inch steel with bronze studs, using a neoprene gasket.

On one 400-foot section of 6-inch pipe, six men had worked four days, using three arc welders, surface fires along the line, etc. without thawing the line successfully. But, using the Zabriskie steam method, it took four men about four hours to thaw and repair the pipe, after it had been cut open at the right places.

KILLING WASPS AND BEES SAFELY

Cleaning out a wasp nest or beehive without getting stung is one of the arts that every painter, carpenter and maintenance man needs to master if he can. Now the prize-winning idea of Maintenance man James B. Burner of Shenandoah National Park, Virginia, will make the task much easier (NPS SE/RO 63-12).



As the sketch shows, Jim mounts an aerosol spray can of insecticide on a 12-foot length of 3/4 by 1-inch wood strip, using masking tape or electrician's tape. He places a short piece of 3/4 by 3/4-inch wood on top of the strip to act as a lever, using two nails to hold the lever piece.



One end of the lever lies on top of the push-type pressure valve on top of the can. A string runs from the lever down the pole so that the operator can use it to turn the spray on or off as necessary.

SAVING ON REPLACEMENT COSTS FOR PUG MILL MIXER PLATES

Frank Roberts, Foreman II, Roadways, in Yellowstone National Park, won an award for suggesting a way to cut sharply the cost of replacing liner plates in Barber-Greene Pug Mill Mixers (NPS M 63-16). What Frank suggests, and has done in Yellowstone, is to cut new liner plates in half and then alternate the ends as the plates become worn.

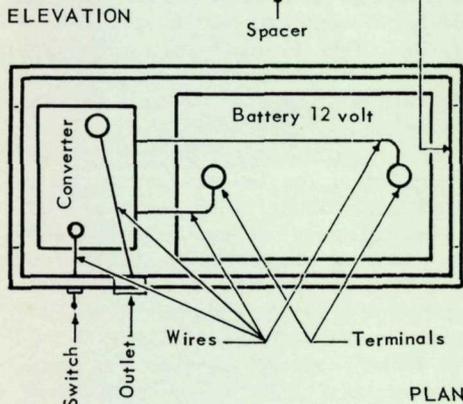
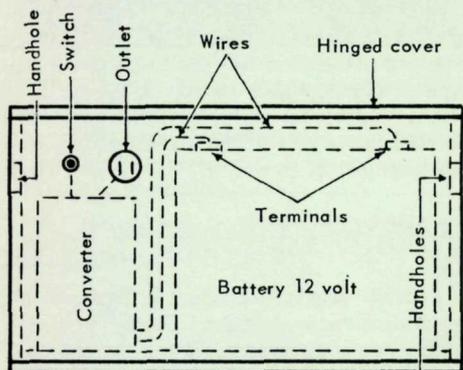
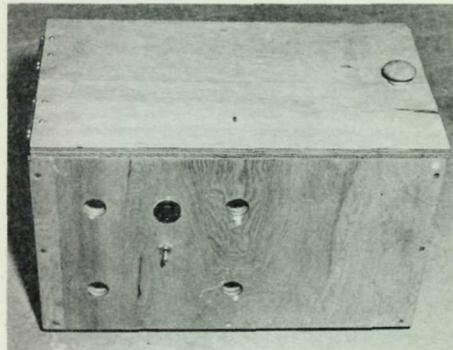
In normal practice in Yellowstone, Frank says, the Barber-Greene unit is used approximately 640 hours a year. Liner plates wear out after 160 to 200 hours of operation, necessitating replacement four times a year. The plates cost \$44.65 each, and using the old procedure, labor costs for replacement were \$114. (8 men for 6 hours; average pay \$2.38 an hour), or a total of \$158.65 for each replacement. This brought the yearly cost to \$634.60. Frank's method cuts the materials cost in half (using only half a plate), labor time to 1-1/2 hours, and therefore brings the yearly cost down to \$203.56.

In addition to the money saving, this procedure reduces down-time on the mixers during crucial periods when they must be utilized to full capacity.

PROJECTOR POWERED BY BATTERY AND CONVERTER

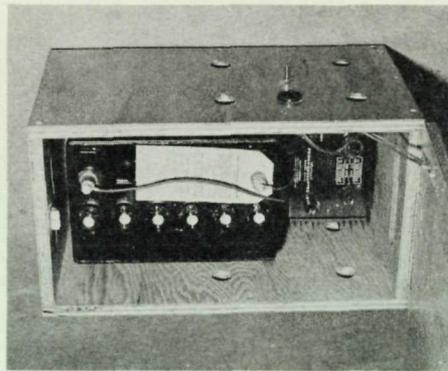
To permit the use of standard slide or film strip projectors in park areas where there is no power, Edgar P. Menning, Park Naturalist, and V. R. Bender, Chief Park Naturalist of Mount Rainier National Park suggest use of a converter hooked up with a standard 12-volt battery (NPS W 63-19). The naturalists already have made extensive use of such a converter, having used it to power a projector to show illustrations for crowds of up to 200 persons at a time during the entire 1962 park season.

The park men secured the converter in kit form (Heathkit Model MP-10) and assembled it in about two hours. It is their guess that an expert could do the job in about half an hour but that two hours sounds pretty speedy to us.



For convenience, Messrs. Bender and Menning built a ventilated box of 1/2-inch exterior plywood with room enough to hold both the battery and the converter. They installed a convenience outlet and a toggle switch on the box.

Cost of the complete unit was about \$50. It will operate a 200-watt projector bulb



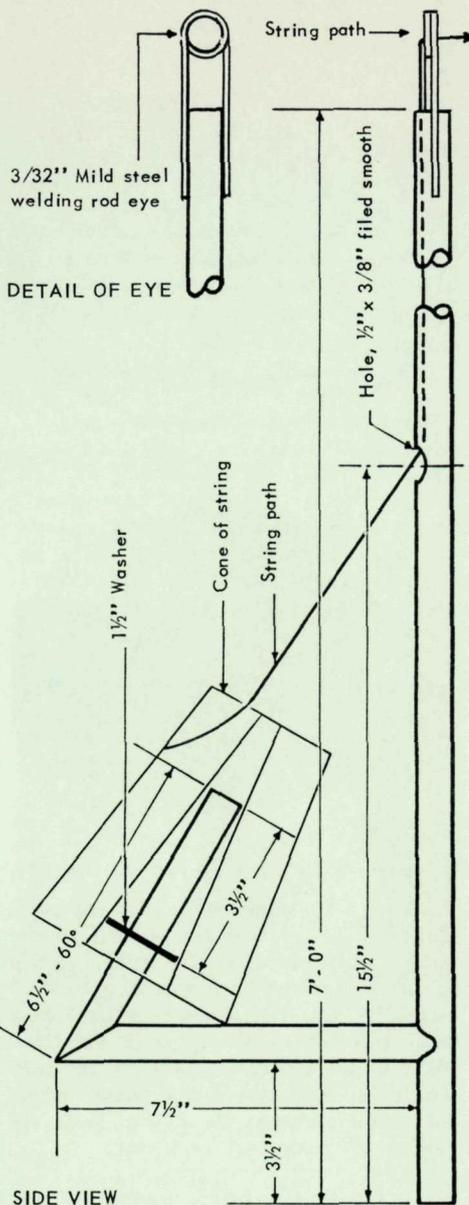
for several hours before battery recharging becomes necessary. Unless there is a convenient charger in the vehicle maintenance shop of your park where the battery may be charged overnight, you'll need to secure a "trickle charger" to keep the battery up to power.

STRINGING POLE

Keeping one's eyes open to the need for operational improvements, and the working tools in every day use, can prove very rewarding at times. William C. Bolton, Laborer on the Pine Beetle Control project in the North District of Grand Teton National Park can testify to this, for he received a substantial award for his design and development of a superior type of 'stringing pole'.



For the benefit of those not familiar with a stringing pole, we explain that it is a device used in laying out string which defines 'lanes' of forest stands where work is to be done. As Bill explains it, "large areas of infested forest lands must each year be divided into lanes of predetermined interval and direction (so that) control crews can come in and thus work a section at a time. The present method of laying these string lines is to use a long broomstick or pole with a cone of string on the top end. . . The method has several serious disadvantages:— the amount of string coming off the cone cannot be controlled; the cone itself has to be manipulated through and around branches, twigs



SIDE VIEW

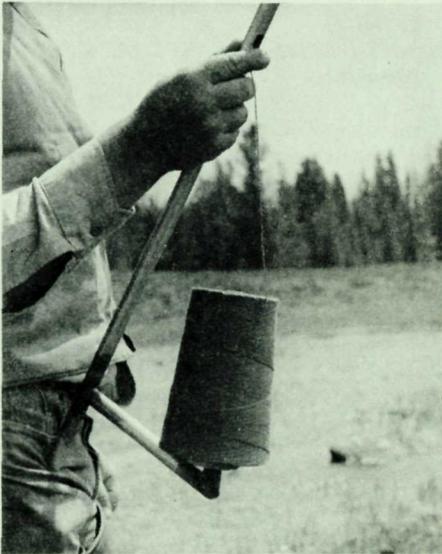
and other overhead obstructions, often breaking because of lack of control on the string itself; low-laid lines are often torn up by antlered animals moving through the forest; the 'broom-handle method' requires both hands to manipulate which can be hazardous in dense undergrowth."

The Bolton stringing pole consists of a 10-foot length of 3/4" thin-wall electric conduit with a spring wire loop welded to one end. A piece of the same size conduit is welded at right angles up 3-1/2



inches from the bottom and extends out 7-1/2 inches. From the end of this piece, another piece is welded on a 60 degree angle, and over this the string cone is placed, resting upon a 1-1/2-inch steel washer welded onto the cone-holding piece just above the point where it is fastened to the piece extending out from the main pole.

The string is threaded from the cone into a smooth hole drilled into the main pole 15 inches or so above the bottom. From there the string travels up inside the pole to the upper end where it passes through the spring wire loop—Bill had his wire loop made from 3/32" mild steel welding rod.



The cost of the entire unit, including welding labor, amounted to only \$2.70 and many hours have already been saved in paying out string—not to mention the effect this improved method has had on frayed tempers!

(NPS/MW-62-72, Stringing Pole)

DEEP SNOW SIGN MOUNTING

Park people located in heavy snow country, or those with roads into the higher elevations which must be kept open the year 'round, are familiar with the problem of keeping the roadside directional and cautionary signs exposed to view. If located too close to the road surface they are likely to be damaged by snow-moving equipment.

Recognizing the need for having the signs exposed to view yet protected from equipment, Thomas J. Adams, Foreman III at Crater Lake National Park designed a workable sign mount for such conditions and won an award (NPS4-62-37, Winter Road Signs).

A 6x6-inch post is installed alongside the road well off the paved surface. A 2-inch hole is drilled from the top down into the post to a depth of 12 inches, and a piece of 3/16-inch strap iron is fitted around the top of the post to keep it from splitting. Next, a piece of 1 1/2-inch pipe is bent at right angles to that when one

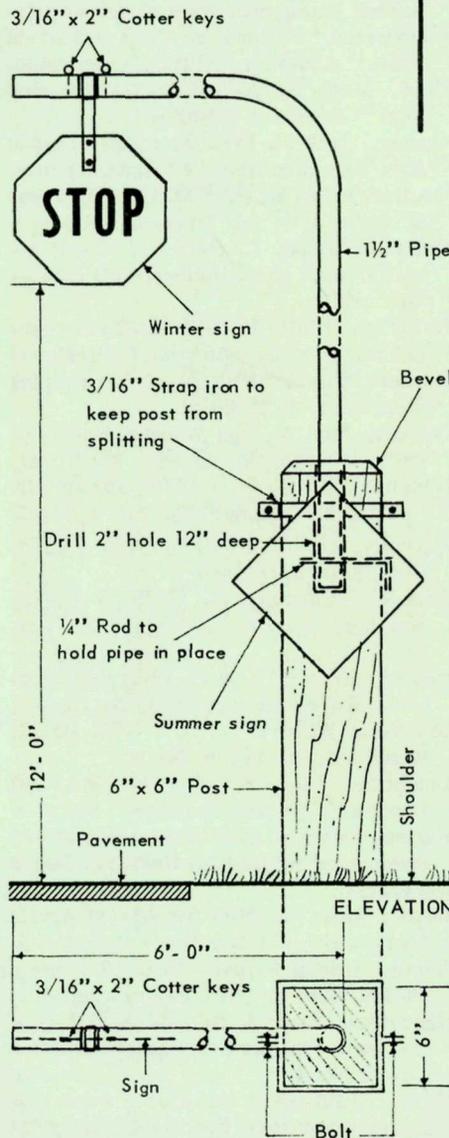
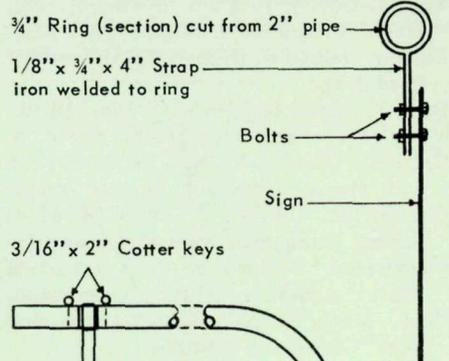
end is fitted into the post hole the other end extends 6 feet out over the roadway and high enough so that any sign suspended from it clears the road surface by at least 12 feet. A 1/4-inch rod is inserted into a hole drilled into the back of the post to engage a corresponding hole in the pipe standard to hold it out over the road and keep it from swinging around in the wind.

The sign itself hangs from the pipe by a ring collar made of a 3/4-inch section of 2-inch pipe to which a piece of strap iron has been welded and drilled. Bolts go through the sign and the holes in the pipe

cotter pins. When the sign is to be changed he simply pulls the outer cotter pin, slides the ring collar and sign off of the overhead pipe and replaces it with another. When the snows have melted, the sign can be mounted directly onto the post and the pipe standard removed and stored.



MOUNTING DETAIL

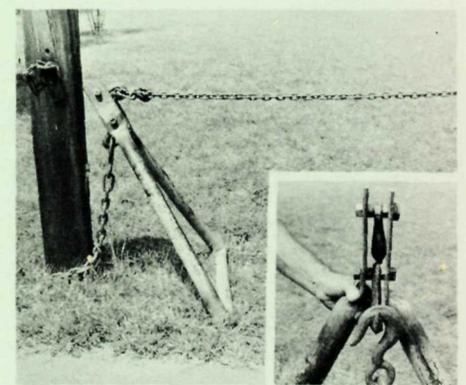


POST PULLING WITH AN 'A'-FRAME

If you're looking for some way to pull those posts, particularly if they're located where you can't get equipment in, look no further. Your problem has been solved by Joseph Hebda, Foreman III, Mixed Gang, at Prince William Forest Park, National Capital Region, NPS. (NPS/NCR 63-17, A-Frame Post Puller.)

Consisting of a length of 2 1/2-inch water pipe bent at two points to form an equilateral triangle 3 feet long to the side, and two hooks mounted one above the other by bolts between two pieces of flat steel extended upward from the apex, the upward pulling power results from a pull on one hook rocking the frame from one angle over to another.

The hooks face in opposite directions, the lower one facing the post to be lifted while the other faces the truck or winch. A snatch chain or cable from the lower hook around the post near the ground line and the pulling cable to the upper hook gets action in a hurry.



Joe reports that this easily-made, inexpensive rig has already saved considerable time and money on one job of removing abandoned telephone poles without damaging the poles in any way. It has proven so effective that a heavier A-frame of channel iron is now being fabricated to do bigger jobs.

KEEPING LEAVES BRIGHT

WITH PARAFFIN

To preserve the bright fall colors of leaves so that they may be displayed over several weeks, use the method worked out by Seasonal Park Ranger, Floyd H. Gunderson, Effigy Mounds National Monument (NPSM-63-26)—dip them in melted paraffin. The early spring green, the deeper summer greens, and the vivid fall colors may all be preserved in this way to make possible lifelike exhibits.

When preserving leaves in the fashion suggested, do not heat up your paraffin more than necessary—just keep it barely beyond the melting point. If extremely hot paraffin is used, the leaves are partly "cooked" and tend to shrivel up.

Floyd dips the leaves quickly in the paraffin then holds them in the air for about a minute to permit drying before putting them down on any surface.

Although the method is usually adequate for permanent displays, the wax-coated leaves will stay fresh looking at least for several weeks. Samples submitted by Floyd with his suggestion in November 1962 were still in perfect condition in March 1963, for instance.

Between the laughing and the weeping philosopher there is no opposition: the same facts that make one laugh make one weep. No whole-hearted man, no sane art, can be limited to either mood.

—George Santayana

The following is a partial listing of individuals who have received National Park Service suggestion awards to date. Following the listed award idea, you will find a page number if the idea was reported in this issue of PLOWBACK. Other listings cover awards for ideas of local application only. Awards information received after April 1, 1963 will be reported or listed in subsequent issues of PLOWBACK.

Adair, Woodrow (NPS M 63-14) Simple Cutter for Corrugated Metal. See p. 3.
 Adams, Wayne B. (NPS 4-62-37) Deep Snow Sign Mounting. See p. 7.
 Alcorn, Wayne B. (NPS 3-62-56) Recording shapes of irregular flat objects.
 Anderson, Carl V. (NPS SW 63-3) Plastic Gloves Serve Many Purposes. See Vol. 6, No. 4.
 Androsko, Joe (NPS NCR 63-23) Quick Pick Up for Soaker Hose. See Vol. 6, No. 5.
 Aranguena, Jose (NPS W 63-26) Flexible Pipe Direct Exhaust for Deadly Fumes. See p. 1.
 Armstrong, Elmer F. (NPS 2-62-55) Accumulating data for snow removal.
 Baker, James K. (NPS SW 63-4) Trapping Live Animals Humanely. See Vol. 6, No. 4.

Baker, William H. (NPS NCR 63-11) Safety guard for Craftsman mowers.
 Beckler, Kenneth A. (NPS NCR 63-16) Directional sign to Mount Vernon on GWMP.
 Bender, V.R., and Menning, Edgar P. (NPS 63-19) Projector Powered by Battery and Converter. See p. 6.
 Bewley, Henry, Scott, Harold, and Stroh, William (NPS W 63-18) Garbage Feeder for Incinerator. See p. 4.
 Bolton, William C. (NPS 6-62-72) Stringing Pole. See p. 6.
 Borca, Mildred K. (NPS M 63-13) Ditto masters for letters requiring 12 or more copies.
 Briggs, George S. (NPS SW 63-28) Trail Work Record at a Glance. See p. 2.
 Bunney, James B. (NPS W 63-5) Portable road drag.
 Burner, James B. (NPS SE/RO 63-12) Killing Wasps and Bees Safely. See p. 5.
 Cantrell, Charles E. (NPS SW 63-20) Pin and sleeve hinge for barrier gates.
 Chadderton, Clifford S. (NPS WO 63-4) Rubber stamp approving shop drawings.
 Chadderton, Clifford S. (NPS WO 63-5) Rubber stamp for verifying wage rates.
 Cook, Mark B. (NPS 3-62-57) Door stop sign "Closed for Cleaning".
 Conner, Jack M. (NPS M 63-27) Traffic light installed at entrance stations.
 Coulter, Ralph W. (NPS NCR 63-35) Frame of angle iron for windows or doors.
 Crisman, Bobby L. (NPS SW 63-19) Installation of photo-electric cell on way-side exhibit.
 Dellacasa, Philip F. (NPS 62-15) Personnel management topics for field offices.
 Dennett, Stewart (NPS SW 63-27) Keeping tools handy on pick-up.
 DuBois, John A., and Wunner, Robert C. (NPS W 63-6) Spring wire road drag.
 Eberling, Joe A. (NPS SW 63-16) Simplified Decal Template. See Vol. 6, No. 5.
 Farrelly, Geraldine, Mrs. (NPS 3-6174) DI-1100 form revised.
 Geerdes, Raymond J. (NPS W 63-27) Weatherproof Fire Extinguisher Tags. See p. 3.
 Goland, Steve (NPS W 63-12) Organization Camp Space Inventory Organizer. See p. 3.
 Grishkot, Wilbert J. (NPS NCR 63-22) Ready Kit. See Vol. 6, No. 5.
 Gunderson, Floyd H. (NPS M 63-26) Leaves Bright with Paraffin. See p. 8.
 Harden, Donna N. (NPS SE 62-65) Progress sheet used in handling Boundary Status Reports.
 Hayes, Alden C. (NPS SW 63-15) Aerial Shots with a Tripod. See Vol. 6, No. 5.
 Hebda, Joseph F. (NPS NCR 63-17) Post Pulling with an "A" Frame. See p. 7.
 Henderson, Floyd A. (NPS W 63-1) Watering New Plantings the Easy Way. See Vol. 6, No. 4.
 Holst, Frank (NPS M 63-36) Back Hoe Carries its Own Yardstick. See p. 2.
 Kasperek, Robert B. (NPS SE 61-76) Master list distributed throughout the Park outlining situations to which they are applicable.
 Kleve, Lester, and Schieber, Bill (NPS

4-62-38) Picnic Seat for Children. See Vol. 6, No. 5.
 Lucero, Anthony J. (NPS CP 61-92) No Parking Signs at Great Falls, Md.
 Mang, Fred E., Jr. (NPS SW 63-26) Improved techniques in scientific photography.
 Manley, Katherine M., Mrs. (NPS CP 62-11) Replace uneven steps at House Where Lincoln Died.
 Martindale, Charles A. (NPS W 63-24) Revolving Water Intake Screen. See p. 4.
 McCrary, Paul F. (NPS W 63-9) Multiple use of cabinet audio visual installation for evening program.
 Muller, Hugh Bell (NPS 1-63-5) Shelves of Cement, Blocks and Wood. See Vol. 6, No. 4.
 Newman, William D. (NPS NE 63-9) No Slips with Rubber Pips. See p. 4.
 Nichols, Carroll L. (NPS SE 63-11) An improvement in spraying procedure disease control activities.
 Oates, Lemely E. (NPS M 63-8) Improved Bear Trap Trailer. See p. 4.
 Putman, Sylvester (NPS M 63-29) Large sink for cleaning equipment.
 Riffey, John H. (NPS SW 63-5) Road Drag for Dirt Roads. See Vol. 6, No. 4.
 Roberts, Frank (NPS M 63-16) Costs for Pug Mill Mixer Plates. See p. 5.
 Robey, George Wallace (NPS NCR 63-13) Safety saddle for hydraulic lifts.
 Sacey, Emmett H. (NPS M 63-29) Drying oven for quick drying.
 Shearer, Mary T., Mrs. (NPS M 63-28) Adequate lighting for public phone.
 Smith, Hugh C. (NPS W 63-2) Emergency Water from a Spigot. See Vol. 6, No. 4.
 Stephenson, Wilbur (NPS W 63-17) Air Line Solves Sludge Problem. See p. 3.
 Stewart, James T. (NPS 2-63-3) No Mud in Your Eye. See p. 2.
 Stout, Harold J., and Windsor, Joseph (NPS SE RO 63-16) Parkway Safety Record Register. See p. 1.
 Sutphin, Garnet B. (NPS 1-60-134) New Shoe Improves Mower Cutter Bar. See Vol. 6, No. 4.
 Sutton, Myron D. (NPS 61-47) Visual and audio-visual programs should have seal of USDI and emblem of NPS.
 Thomas, James E. (NPS 6-62-88) Walk signal at 19th & Cons. Ave., N.W.
 Thomas, L.K., Jr. (NPS CP 62-22) Distance interval chart on reverse side of map.
 Thompson, James B. (NPS M 63-12) Promoting Visitor Safety. See p. 1.
 Thurston, Dow L. (NPS WO 62-25) Use of low cost revolving spindle for projector turntable.
 Vest, Frederick V. (NPS RO 63-25) Sign Does Double Duty. See p. 2.
 Watta, Jack E. (NPS WO 62-22) Std. form for preconstruction conf. & Handbook.
 Wilkinson, Cecil C. (NPS 62-19) Elimination of Commendable Serv. Award cert.
 Wilkinson, Elwyn G. (NPS WO 63-2) Waterproof notebooks.
 Zabriskie, May O. (NPS 2-62-35) Steam Thaws Frozen Water and Sewer Lines. See p. 5.