

The Sounds of our Parks — A Resource We Can Give to the Visitors

By John Hoke

Back in 1970 this writer did a short tour of duty serving as a Watch Director at the Tektite II mission on St. John in the Virgin Islands National Park. This program was part of the Man-In-the-Sea program jointly conducted by several agencies of the government.

The task of Watch Director was shared by a four-man team (all on loan from their various Department of the Interior agencies). The 'hard' shifts (such as the midnight to eight AM 'graveyard' shift) were rotated on a schedule, but each shift was only eight hours each day, per man. This left the balance of each day for sleeping and recreation.

Each of the 'watch', on off hours, did his thing to his own tune. Some spent time in the water — diving into the coral gardens below, or just basking in the tropic sun. Others prowled the island; hiking, taking pictures, nature-watching, or what have you. Some fled to nearby Charlotte Amalie (on St. Thomas) for more urban pleasures. This writer did a lot of these things but as the tour of duty was for eight weeks, some of these avocations 'wore out', and one late dark night found him sitting on the beach at Little Lamashur Bay, looking at the stars — and listening to the night noises screaming out of the vegetation on the hillside behind the bay.

Nighttime seemed to be the active time for 'most every frog and insect' that lived there. The



Edward and Larry Hoke making a stereo recording of light surf at Cape Hatteras National Seashore.

(Continued on page 22)

thought occurred to this writer that 'souvenirs' of this place ought to include this, too. He hurried back up the dark country road to Base Camp, and brought back a small battery-operated portable stereo cassette tape recorder that was otherwise used to play music during long periods of idle time up in the Command Van, during nighttime watch shifts.

Back on the beach the recorder's two mikes were set at the best angles for picking up both the light 'wash' sound of the bay water flowing over the sand at tide's edge and the nightlife animal sounds coming down off the hills. This was tricky to do, in total darkness — if a light were used the sounds of life nearby ceased, so doing it all in the dark was a necessity. The machine was turned on for five minutes. . . .

This operation was repeated over the next several weeks at many sites on the island — and mostly at night — and the total roster of recordings came to include takes of more water noise, often with gulls and other bird cries included, differing night noises deeper in the park's stand of vegetation, soft wind noise — blowing through hillside stands of grass — and even included the sound of a jeep struggling to climb the unbelievable road leading up to the Command Van of Operation Tektite II.

After all these years, this tape remains the prized souvenir of the writer's visit to the Virgin Islands; the one that tells the most about the place. Yes, records of the trip include many drums of slides and the other more conventional collectibles that were gathered during the tour. But on cold winter nights, back home, selections of these tapes played on the home stereo set (preferably in a darkened room) do the most to take the writer back to St. John. The sound of it all is simply haunting.

In the years since then the writer made it a first order of business to make these kinds of

recordings almost everywhere he went. The collection now includes the roaring of the surf at Nags Head and Cape Hatteras, 'gators bellowing in the Everglades, rain falling through vegetation almost everywhere — the list is now prodigious. So many are there, now, that the collection has been refined to shorter tapes that include "The Best of (name of place)."

It's very easy to think that pictures are the main communication mechanism among such souvenirs. Yet, it is these recordings that most stimulate the sense of recall one expects when using souvenirs to revisit favored places. Others must feel the same way for there are now many commercial 12" long-play stereo recordings that deal solely with 'rain', 'meadowlands' (with background bird sounds), and other sounds of natural environment.

With such potential impact it is a wonderment to this writer that he has yet to find such 'canned environment' cassettes or records in the otherwise book-and-picture-filled racks of park concessionaires. And there also appears to be a paucity of Park Service generated archival material that includes recordings featuring this important environmental element of our many natural-area parks.

Because we must police our valuable resources against the visitor-urge to collect things in the parks that are fragile (such as flowers) — or unreplacable such as 'samples' of petrified wood, or the obsidian glass in Yellowstone National Park — we should try equally to find constructive ways to satiate this very human urge; to take a piece of the park home as a souvenir. We have long used the slogan, "take only photographs and leave only your footprints," to ward off the plundering of park resources. We are in an excellent position to help blunt this urge, in a positive way, by adding "sounds of the parks" to this message.



Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
National Park Service

John H. Davis, Executive Director
National Recreation and Park Association

EDITORIAL STAFF

National Park Service
U.S. Department of the Interior
Division of Cooperative Activities

Kathleen A. Pleasant, Managing Editor
Fred Bell, Graphics

NRPA PRINTING STAFF

Albert H. Ziegenfuss, Manager

The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is \$105; annual renewal is \$45. A separate subscription to *Grist* is \$20 initially, and \$12 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

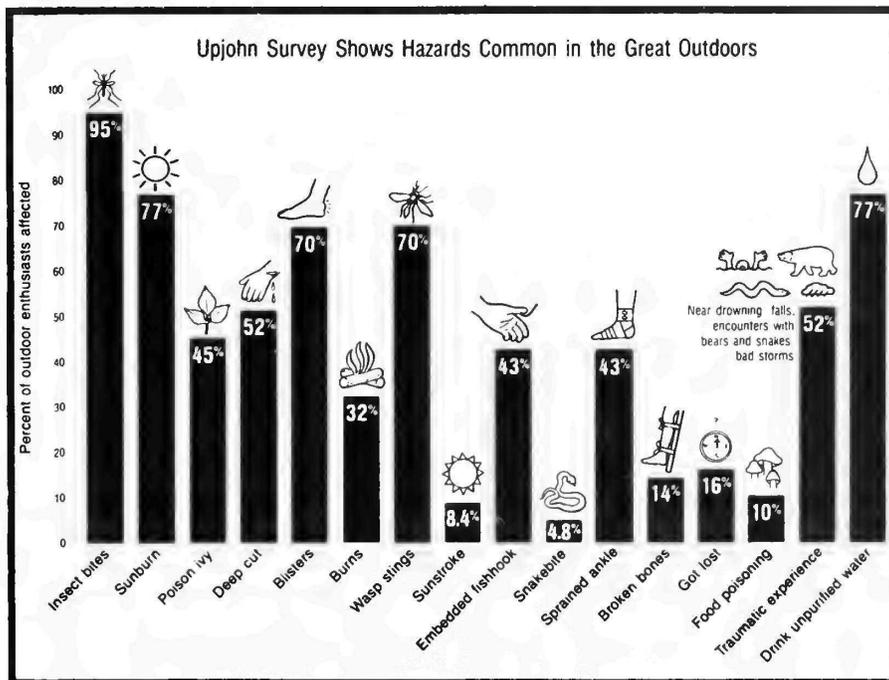
First Aid Items for Outdoor Enthusiasts

A recent national survey of 750 avid outdoor enthusiasts showed that as many as 80% of the nation's outdoorsmen suffer frequent and repeated accidents and illnesses during their excursions. The following summary recaps the most common ailments reported, and provides tips for accident prevention and treatment from wildlife photographers and wilderness expert Leonard Lee Rue III and Dr. George Royer, M.D., of The Upjohn Company, sponsor of the national survey.*

Sunburn — Of those polled, 77% have been sunburned recently and 42% have had more than five burns in the last few seasons. Hikers, campers, canoeists and skiers were most vulnerable. Rue advises wearing long-sleeved cotton clothing, a wide-brimmed hat and using a sunscreen with an SPF of 7 or higher.

Sprained ankle — 43% had suffered a sprain. Bikers, hikers and rock climbers were the most frequent victims. Dr. Royer suggests treatment with cold compresses followed by hot ones. Stay off the ankle as much as possible; wrap in an Ace bandage.

* "The in-depth first aid survey of 750 hunters hikers, anglers, backpackers, canoeists, mountain climbers, bikers and skiers was conducted by Dresner, Morris & Tortorello Research, Inc., of New York for The Upjohn Company of Kalamazoo, Mich. The male and female respondents — each of whom participate in at least two listed outdoor activities for three weeks or more a year — were screened and selected from four geographic regions (North, South, Midwest and West) of the U.S. The results are projectable nationally with a margin of error of ±4%, according to Upjohn.



Deep cut — A little more than half had experienced such injuries. Suggested treatment: 1) stop the bleeding by direct pressure; 2) apply pressure bandage; and, 3) elevate the limb until you can get medical help.

Insect bites — More than 95% of the respondents said they were plagued by insect bites and stings each season. Popular treatments included mud, vinegar, ice, soap and water, hydrocortisone and alcohol. The preferred treatment by Southern outdoor enthusiasts was alcohol. The preferred treatment by male outdoorsmen across the country was to "do nothing"—just suffer. "I've used mud to stop the itch when I had nothing else," says Rue. "And vinegar will relieve the sting somewhat. Although ice will do the trick, it's mighty hard to come by on the average outdoor trek! I've found the sap

from Jewelweed works well." He also said that outdoorsmen are using more and more hydrocortisone to relieve the itch and swelling, now that one can get it without prescription.



Blisters — 70% report they often get blisters, with canoeists, backpackers and mountain climbers reporting the highest incidence. One of the more unusual treatments mentioned was to pull a needle and thread through the blister and leave the thread in. "This old wife's tale (Continued on page 24)

isn't very wise," said Dr. Royer. "You're asking for an infection." Dr. Royer states, "Don't pop a blister so it won't be irritated further. If you think it will pop due to friction or pressure you can't avoid, cleanse the area, pop it yourself with a sterilized needle, apply antibiotic and cover with gauze and adhesive tape." But do not, he cautions, pop a blister caused by a burn.

Broken bones — 14% of those surveyed had broken bones during outdoor ventures. Interestingly, more hunters and canoeists than skiers suffered fractures. To tend a broken bone until medical help arrives, stop the bleeding with gentle, direct pressure; cover the entire wound with a bandage; treat the victim for shock; splint the injured part, tying the splints in place above and below the injury. DO NOT try to set a bone or push a protruding bone back into the body.



Burns — (such as from campfire) Almost a third of those polled had been burned during recent outings. They reported using cold water, ice, bandages and butter to treat their injured skin. However, the preferred treatment for common first- and second-degree burns is to apply cold water (not ice) or cold compresses. Next, cover the affected area with sterile dressing. Dr. Royer warns "it is important not to use butter or an ointment on a bad burn. The salt in butter will irritate the tissue. And, a doctor will have to scrape off the butter or ointment before treating you."



Embedded fishhook — 43% of anglers and 34% of all outdoor

enthusiasts polled said they had experienced this accident. The American Medical Association recommends pushing the embedded hook through the skin, then cutting off the barbed end so you can slide the hook out of the skin.

"But there's a relatively new method," says Rue, "that starts with pushing the eye of the hook down against the flesh at the site of protrusion. Then loop a cord under and around the fishhook. While pushing down the eye of the hook to remove pressure from the barb inside the flesh, you pull the hook out by pulling on the cord - in the direction opposite the eye of the hook."

Poison Ivy — Only half of the respondents knew how many leaves are on the poison ivy vine (the plant has three leaves on each stem). "If you suspect you have touched the poisonous vines or shrubs, you should wash off the affected area with soap and water, or just water if that's all you have. Then, change your clothing because the poisonous resin can easily stick to your skin if you touch contaminated fabric. A hydrocortisone medication will help relieve the itch and redness of early or mild cases of poison ivy," explains Rue. "Jewelweed is good, too."

Safety Insurance — Almost 75% of the respondents said they take a first aid kit with them on outdoor treks. But the average kit lacks many of the essential first aid supplies appropriate for extended outdoor ventures. Rue says a survival pouch, filled with about 30 items essential for safe excursions - whether a person is backpacking in Yosemite or hunting along the Ganges River - can be bought for about \$35 and will help insure years of safe travel. Based on more than 40 years of experience in outdoor adventures, Rue recommends stocking the pouch with the following items:
Water purification tablets
Anti-diarrhea medication
Mylar "space blanket"
Band-aids, gauze, adhesive tape

- Antibiotic ointment
- Alcohol pads (antiseptic)
- Cutter's snake bite kit
- Aspirin or Percogesic
- Soap
- Prescription medications
- Cortaid for poison ivy and insect bites
- Solarcaine for sunburn
- Sunscreen
- Police whistle
- Nylon rope
- Flashlight (or "bite light")
- Knife
- Snare wire
- Nails
- Plastic bags
- Lip balm
- Compass
- Butane lighter
- Safety pins
- Extra socks
- Extra shoelaces
- Insect repellent
- Survival/first aid manual

This article appeared in Woodall's *Campground Management*, Volume 14, No. 4, April 1983.

Emergency Equipment Flashers

The roads at Point Reyes National Seashore (CA) have many switch-back curves and visibility is often poor because of the frequent dense fog. This situation creates a potentially hazardous condition for the dump trucks when they are making their rounds.

Motor Vehicle Operator Anthony Richard Bettencourt suggested equipping the dump trucks and one pick-up truck with overhead (ramp type) emergency road equipment flashers. These flashers are visible from a greater distance, and can penetrate the fog, thus reducing the possibility of injury to the workers, the public and the equipment.

Bettencourt was presented a \$25 National Park Service incentive award for his suggestion.

Sounds of Parks

(Continued from page 22)

Quite aside from serving the wants of our visitors (something we all too often leave to the concessionaires), we ought to include collecting the sounds of life in our parks as a valuable adjunct to the other resource-cataloging that is done by our resource managers. The technology for doing this (such as was employed by the writer to make his first collection in the Virgin Islands) has become increasingly simple and easier to accomplish since the advent of the small carry-along stereo recorders now virtually a basic part of the jogger's layette of equipment.

Today's cheapest portable cassette recorders are almost in league, technically, with the studio equipment of the 'sixties' — and get better almost daily. While you can go 'professional', by today's standards, and spend a grand on a fine portable field cassette recorder for the collection of such park sonic records, almost any commercial-grade recorder will do a fine job of capturing the sounds of a park, in living stereo.

It will call for using those of our staff who would rise enthusiastically to the task, for it's the kind of chore that requires a willingness to have such recording gear ever present. The best of park 'noises' are often a momentary ephemeral happening. One must know where to be at the right place and time, to catch the best renderings of an alligator chorus. Because current equipment is so small there is little reason not to have it always handy in the park ranger's duffle of gear.

Studio-quality skills can be a real asset but are not a precluding requirement. If the person taking on the task becomes enthusiastic about it, only a little bit of wasted tape and effort might accompany early efforts, during which time the user of the gear becomes increasingly proficient — and imaginative — in ultimately making the results of such efforts quite superb. And the costs for such

capability need not exceed several hundred dollars for a basic recorder, a set of hand-held mikes (for tailoring sound-source choices), a set of light headphones, and a goodly stock of blank tapes and a tape-wiping device. The rest is good record keeping — a batch of tapes — unlabeled — is going to make application of them difficult.

Where good imagination comes in deals with just how well the ranger knows the park — and knows what to record, where, and when (time of day, or season). The list of likely candidates beggars description (and would be too long to include here). The sound of Old Faithful going off is the kind of



candidate that might well be overlooked — because we have become so used to it. But it probably still sounds pretty much as it did the first time it was heard, centuries ago, i.e., not all the valuable sounds are animalculine. The sound of falling water and other physical sounds are just as much a part of the park as the critters that live in it.

A logical extension of such record keeping would be finding avenues for getting the best of such sounds into the hands of the visitors to our parks. A main reason for having the Park Service take the lead to obtain such recordings is a case of simple economics (quite aside from the advantage that we would also know best where to get the best sounds — and when). Our staff is always abroad within the parks, engaged in many activities. Thus, they have the best chance to obtain even the briefest of important sonic events. Com-

mercial producers of such recordings would be hard put to afford the staffing costs that would accompany any attempt to faithfully record all the significant sonic expressions of any given park. They simply couldn't afford the standby time and, at best, could obtain only a limited representation of the sounds of the parks. But an ever-increasing collection of such material, picked up by our park managers while they are out in the parks for other reasons, would attract the attention of those whose business is the marketing of packaged recordings — and who would know full well what their costs would be to do the same job under conventional production cir-

cumstances. The park's collection of park sounds might very well stimulate commercial people to go forth on their own, and produce such programs, but the economical way of obtaining the vital 'raw' recorded material dictates that park people be involved in the process. And if park-made recordings are ultimately used, it is logical that certain royalties would go to the Parks and History Association as payment for their use — and serve to pay for our cost to get the material.

From a marketing point of view, the packaging of such materials could be quite broad. "Sounds of our Parks," on cassettes or records, could be packaged with illustrations and interpretive copy that could accompany such recordings. These could include slides for those who might want to both show pictures and listen to the sounds

(Continued on page 26)

of the subjects of the pictures. One considerable benefit of having such recordings available to park visitors is the ability to include sounds that are highly seasonal (mating calls, etc.) that can be enjoyed — live — only by those visitors who happen to be in the park at the right time. Recordings of such sounds, available from concessions outlets, would eliminate this seasonal limitation of the park visitor experience.

Lastly, our interpretive staffs and rangers could become sufficiently attuned to the concept to alert and advise visitors on how and where to make such recordings on their own. A great many park visitors now carry such small recorders and might welcome the opportunity to use them for something other than just listening to music while they jog or travel about in the park. It shouldn't be hard for park staff to recognize such candidates; they usually have such recorders hanging from one shoulder. Just giving them the idea might be all there is to it. True, many will not have the separate hand mikes that lend themselves to better stereo separation — and control — but units with built-in mikes do almost as good a job. But having any such recordings of life in the parks is going to be of benefit to the visitor. If they then want to do more of it, better, they will be quite willing to pick up much better equipment for their next trip.

What's involved in all this is really quite small. But the returns would be a tremendous boost for the visitors — almost all of whom increasingly wish to take more and more of their visitation experiences home with them. Here is a way we can offer positive results that harmlessly whet this appetite. All too often we spend too much of our time trying to stifle this urge, because of the potential damage that can come from the satisfaction of the urge when it involves removing resources that cannot be sacrificed.

John Hoke is an Urban Park Program Specialist with the National Park Service's National Capital Region.

Energy Saving

Wood-burning Stove

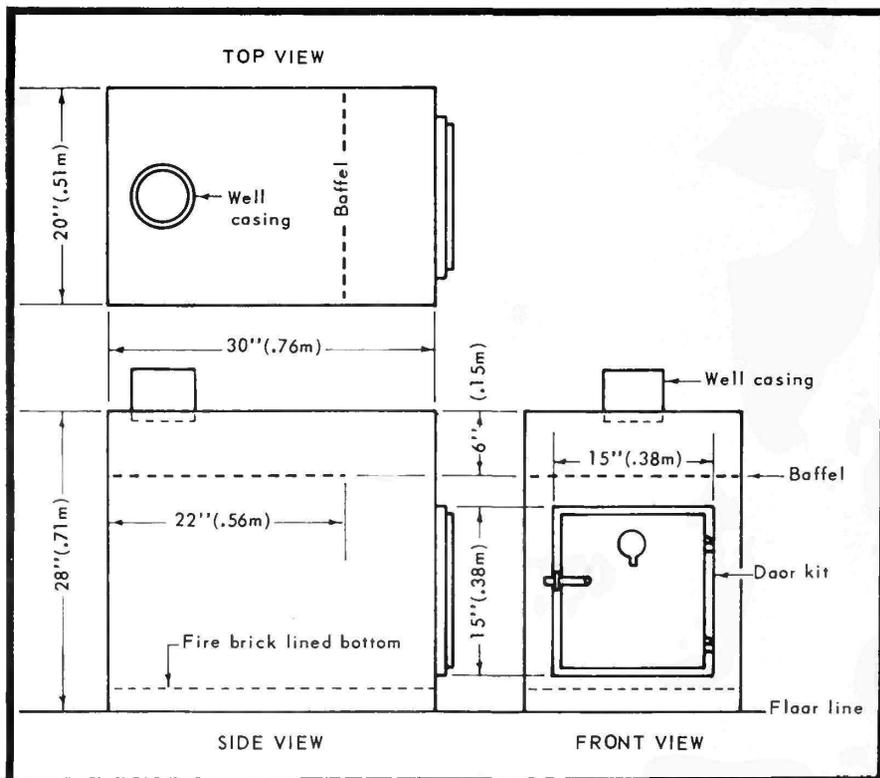
Labor Foreman Sheldon P. Mentzer of Colonel Denning State Park (PA) designed this wood-burning stove with inexpensive parts and the use of a skilled welder.

The stove is constructed of ¼" plate steel and the pipe collar is 6" well casing. The door was ordered in a kit for a wood burner converting a 55-gallon drum. Approximate cost for materials was \$159.00 and it took

some 30 man-hours to construct.

Thanks to Park Superintendent Kenneth J. Boyles for sharing Mentzer's design with GRIST readers.

Editor's Note: Before building a stove such as this, it would be advisable to make sure your chimney, fireplace, floor under the stove, and the wall areas near the stove meet standards set by the *National Fire Codes*. A copy can be obtained from the National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210.



Autotherm Energy Conservation System

When emergency vehicles are deployed during winter months in the Grand Canyon National Park (AZ), they often must be left idling to keep the patrol vehicles warm during stationary patrol, i.e., radar assignments, on-scene motor vehicle accident investigations, routine reports in a public setting or to keep ambulances and rescue vehicles warm for effecting emergency care. These situations increase energy consumption and pose the threat of carbon monoxide poisoning.

Law Enforcement Technician Steven E. Schneider (formerly with the Grand Canyon NP) suggested utilizing the Autotherm Energy Conservation System (AEC) to conserve energy and provide better and safer services to the public. This system continues the circulation of hot engine coolant through the vehicle heater even when the engine is shut off, and eliminates the

danger of carbon monoxide poisoning.

A small, magnetically coupled, electric motor driven circulator, easily spliced into the heater hose, automatically continues circulation of engine coolant through the heater whenever the engine is turned off. The vehicle may be left safely parked and locked, the interior kept warm, windows and door locks free of ice and snow, and the vehicle ready to go on a moment's notice. When water temperature falls to 95°F, a thermostat automatically turns off the entire Autotherm system. This is beneficial during inclement weather when rangers are absent from the vehicle for investigations, shift changes, etc.

This conservation system would enable rangers to keep warm while operating radar, completing reports without having to idle the vehicle's engine. It would also keep ambulances and rescue vehicles warm during emergency operations for effecting patient stabilization and life support care. It would also

preserve life-saving emergency drugs which may become inactive if subjected to the cold, i.e., "Manitol" which is used for head trauma which crystalizes at approximately 50°F. The AEC System would also provide a safer and faster response during call-out periods, for there would be no need to clear frost from the vehicle's windshield; thus reducing the potential hazard of an emergency vehicle being operated with a full or nearly obstructed windshield. The AEC System requires no maintenance, is adaptable from car to car and can be installed in approximately 1-1½ hours for a cost of about \$150 per car (including labor).

Schneider estimates a savings of approximately \$744 in gas per vehicle that is operated at the Grand Canyon's South Rim during the winter months.

Further information on the Autotherm Energy Conservation System may be obtained from: Autotherm, Inc., P.O. Box 333, Barrington, IL 60010, telephone (312) 381-6366.



U.S. Park Police Solar Demonstration Project — An Economic 'Trickle' Type Solar System

On March 28, 1983, 5 months of winter operation was completed by the United States Park Police Solar Demonstration Project with spectacular results. During this five-month period only \$302.46 was required for electricity to heat the 2,000 square foot offices occupied by the U.S. Park Police Aviation Unit. Of this \$302.46, only \$135.39 was attributed to electricity required for back-up or auxiliary heat. Ninety-seven percent of all heat was supplied by the solar system.

The United States Park Police Demonstration Project utilizes a "trickle" type solar system invented by Dr. Harry Thomason over 25 years ago. It is a system that can be easily installed to provide space heat and hot water or just hot water, to any commercial or residential building. The U.S. Park Police Y.A.C.C. camp constructed the building which houses the solar system, with the help of the Harpers Ferry Job Corps, and the National Capital Region-East maintenance personnel completed the project in April 1982.

Any park with plumbing, electrical and basic construction skilled personnel can easily install a similar system which could save thousands of dollars over the cost of a conventional heating system. All that is required is a pitched roof in good repair, oriented within 15 degrees of due south, and room for the storage bin to allow the use of this type of solar system.

The heat collection portion of this system is incredibly simple. It consists of a solar controller with temperature sensors located in the storage bin and within the solar collectors to evaluate the availability of sufficient heat to activate the system. If the temperature in the collectors is



high enough to gain solar heat, the controller turns on the two 1/6th h.p. circulating pumps that send water from storage to the top of the collectors. This water flows, or "trickles," down the face of the 60° sloped collectors, runs through 2" copper pipes at the base of the collectors, and back into the storage bins (these contain two 275 gallon domestic hot water (D.H.W.) preheaters and a 1600 gallon tank used for space heating).

That's it. There are no pressure relief valves, drain back devices,

or expensive antifreeze solutions, and there is no danger of freeze-ups, provided the copper feed and return pipes are pitched to return the solar water back to storage when the system is deactivated. The life of the system is over 20 years, and could have been extended even longer than that if stainless steel tanks had been used instead of the conventional steel storage tanks.

Heat is sent to the occupied space via a squirrel cage blower

(Continued on page 29)

which is activated by the thermostat. This blower sends air into the bottom of the storage bin which has an air plenum constructed of standard 8" by 12" cinder blocks situated to direct the air under and around the 1600 gallon tank. The tank is surrounded by 35 tons of large, round, washed gravel tailings. The air is then directed back into the occupied space carrying the stored solar heat. Here again, it's just that simple.

City water is preheated by sending water to a 275 gallon storage tank which contains a 40 gallon preheater. This preheated water is then piped to a commercial 50 gallon domestic hot water heater. In the spring, summer and fall, the solar system delivers 140° water so that from about May 1 to mid-September, the conventional D.H.W. heater can be shut off altogether.

The system has no back-up furnace, but instead utilizes the existing 50 gallon D.H.W. heater. The first stage of the thermostat activates a blower that extracts heat from the main storage bin. When this is not sufficient, the second stage of the thermostat activates a 1/20th h.p. circulating pump sending hot water from the D.H.W. heater through 150 feet of copper finned tubing located in the ductwork above the main storage bin. Air from the occupied space is blown through the storage bin, picking up some residual solar heat, then warmed more by the finned tubing to provide heat back to the building.

During the 3,528 hours of the 5-month heating season, back-up heat was required only 96.4 hours, or less than 3 percent of the time. The cost for back-up heat was only \$135.39, which included the cost to operate the blower & 1/20th h.p. circulating pump for those 96.4 hours, and the total electrical consumption of the 50 gallon, 208 volt, 3-phase hot water heater.



The United States Park Police are extremely pleased with the success of the Solar Demonstration Project and hope to see it duplicated in other National Park Service buildings across the country. For further information

contact Michael Foster, Energy Coordinator, c/o Commander, Technical Services Branch, United States Park Police, 1100 Ohio Drive, S.W. Washington, D.C. 20242, (202) 472-5786.



Maintenance



Nail Storage

Maintenance Worker Deswood Bitsoi of Canyon de Chelly National Monument (AZ) came up with an idea to make his job a lot easier.

Maintenance personnel had difficulty finding the right size nail when they needed it in a hurry because the nails were always mixed together. Bitsoi solved this problem by constructing a box for holding separate cans of assorted

size nails. The nail containers were made from old one-gallon white gas cans with $\frac{1}{2}$ of the front portion cut out which he painted and marked according to nail size. He then set the cans into boxes which could hold five to six cans each for storage.

Bitsoi's container system provided many benefits to the maintenance personnel. Nails can be separated into assortments

such as roofing nails, tin roofing nails, chicken wire nails, U-nails for fencing, etc. Also, his device makes it more convenient to store nails, uses less space than large nail bins, and saves precious time when trying to find nails and taking inventory.

A \$96 National Park Service incentive award was presented to Bitsoi for his suggestion.

Lawnmower Servicing Ramp

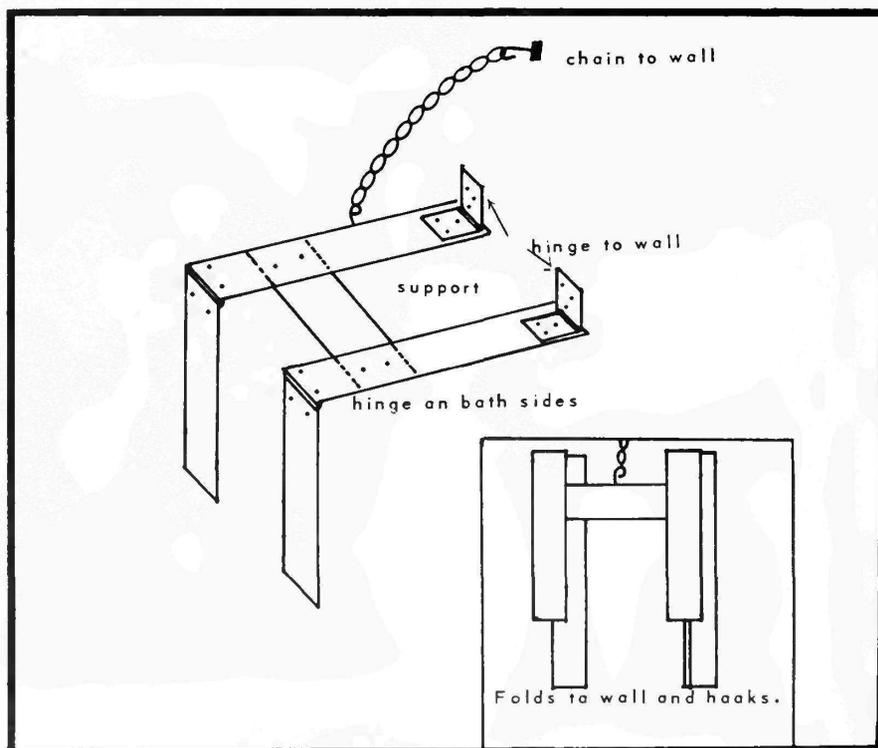
When servicing lawnmowers and other such equipment, one usually tilts the mower on one side. This usually causes the fuel to spill. If the mower is tilted in the opposite direction, away from the gas tank, the fuel floods the carburetor and washes oil from the cylinder walls. And, if you tilt the mower with the gas tank down, both the gas and oil spill.

Elias H. Baiza, maintenance mechanic at Carlsbad Caverns National Park, New Mexico, developed an easier method to service such equipment. He built a small ramp approximately 2' high which is mounted to a wall. The ramp consists of 2 strips of wood (1x4 or 2x4) connected by a support. Chains are attached on each wood strip to the wall. With two hinges installed, one could also make the ramp able to fold up onto the wall for storage. A hook in the wall would hold the ramp in place while being stored.

Baiza's ramp saves time when servicing equipment and reduces the possibility of injury by eliminating the need to lift equipment during the servicing opera-

tion.

A \$25 National Park Service incentive award was presented to Baiza for his suggestion.



Binocular Holder

Mac Carlisle, Assistant Property Manager at Pigeon River Fish and Wildlife Area (Indiana), developed this handy binocular holder to help persons who need ready access to binoculars while in a vehicle.

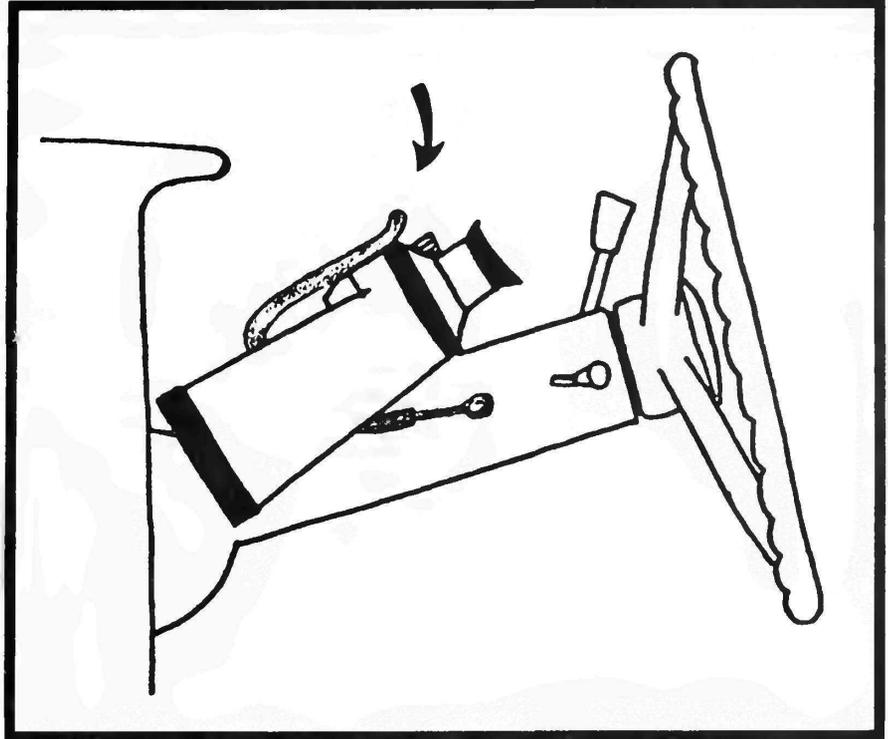
Start with approximately 26" of 1/16" diameter solid malleable wire. (A coat hanger will work but is generally too stiff to form the mounting loops.) Test your choice of wire to see if you can form the small mounting loops before proceeding.

Once a workable wire is found, begin in the center position and work outward, forming a contour that fits your binoculars best. Use pipe or other objects to bend the wire over, helping to make smooth curves. Trial and error will produce a design that fits both your binoculars and your steering column.

When the desired configuration is reached, check the fit once again on the steering column. Then slip a piece of automotive vacuum hose over the wire leaving 3-4" of wire exposed at each end. With the aid of a large nail or other suitable mandrel, use wire cutters and needle nose pliers to form the mounting loops.

Position the holder with the binoculars on the steering column and make any necessary bends to get the desired fit. Keep in mind that vehicles with automatic transmissions or column-mounted shifts will have a rotation of the column during shifting, so make certain there are no binds or restrictions and that the holder sits level in the drive position.

Once the best possible fit is achieved, make pencil marks through the mounting loops onto the steering column. Remove the holder and using a 3/16" bit, drill two holes in the steering column needed to mount the holder. When drilling, remember that there can be electrical wiring harnesses inside the steering column as well as other mechanical linkage so drill carefully, piercing

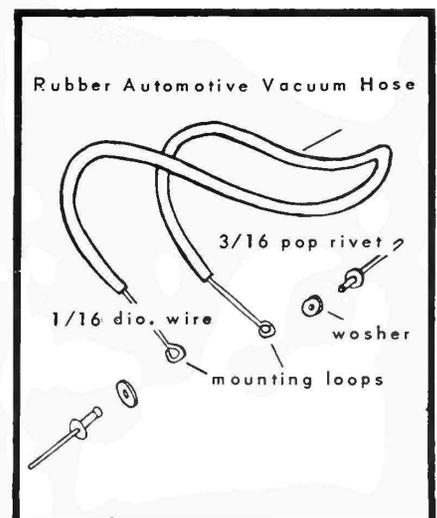


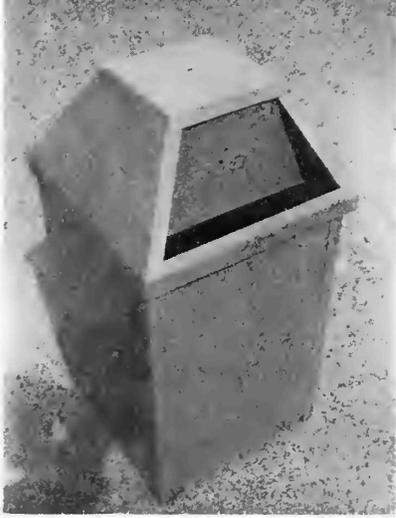
only the outer column housing. your vehicle has a collapsible steering column or you are unsure about drilling holes, check with your local automobile dealer or secure the holder with a strong fiber tape.

The final installation should be made with two 3/16" pop rivets or suitable sheet metal screw

substitutes. When properly installed, the binocular holder will provide a secure rest within hand reach during your trips.

Our thanks to Gerald J. Pagac, Director of the Outdoor Recreation Division, Indiana Department of Natural Resources, for sharing Mac Carlisle's device with GRIST readers.





Springs on Garbage Can Lids

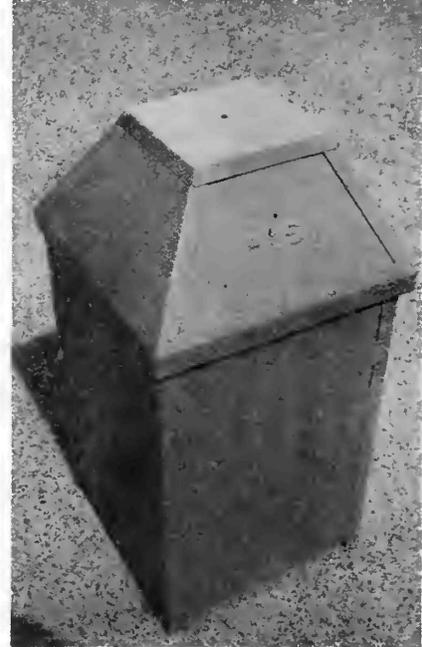
The springs on garbage can doors become weak or often break after a few days' use. As a result, the doors hang open. Since replacement parts cannot be acquired, a new garbage can must be purchased at approximately \$8.50 per can.

Earl W. Castle, maintenance worker at Saguaro National Monument (AZ) solved this problem by mounting a screen door spring on the inside top of the garbage can lid, and on the inside of the doors. This spring increases the tension on the doors, thus keeping them closed. This procedure can be used on any garbage can that has a swinging door with weak or broken springs.

The hardware needed to complete the job is: three 10-24 x 1/2" screws; three nuts to secure screws to the can, one 16" long x 1/2" diameter door spring, and one conduit clamp to secure the spring to the top of the can.

The total cost of the hardware is under \$2.00. By not purchasing a new garbage can, the savings would be approximately \$6.50 per can. In addition to a cost savings, Castle's idea would improve sanitation and the general appearance of the garbage can.

Castle received a \$150 National Park Service incentive award for his suggestion.



Sign Identification

Approximately 100-200 signs were being lost each year at the Grand Canyon National Park (AZ) due to vandals removing them from posts. Each sign costs approximately \$25.00. If a Law Enforcement Officer found someone with a sign in his or her possession, the officer could do nothing because there was no way to identify the sign as belonging to the National Park Service. The officer would have to

see someone actually remove the sign before anything could be done.

Signmaker Clyde W. Hathaway suggested implementing a transparent decal identification system such as most states are using. He suggested using an arrowhead with the letters NPS inside the arrowhead and a blank strip which can be written on for use in keeping a sign inventory. The decal would have a pressure-sensitive backing so it could be put on existing signs without taking them down. His system

would permit the identification of the signs as Federal property.

Although it is difficult to estimate the cash savings from this suggestion, if 20 signs a year were prevented from being stolen, this would more than pay for the 2,000 decals at 16¢ each.

Hathaway received a \$150 National Park Service incentive award for his suggestion.