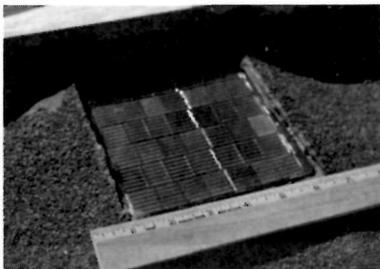


SOLAR CELL POWERS MESSAGE REPEATER

Finding a way to operate a message repeater in a spot remote from electric lines, while at the same time exerting *negative* additional effect on the environment, and thus heightening Park visitors' enjoyment, at a very modest cost, are the laudable results achieved by Bill Rabenstein, Chief Park Naturalist at Big Bend NP. The key to all this is a device which is only 5 x 5 inches small, and 1 inch thick. It's a solar cell.

Placed on the roof of an exhibit at Big Bend, it feeds a continual trickle charge of 16.5 volts to a 12-volt storage battery, which, in turn, powers an audio message repeater unit. And it's working beautifully. In theory, the battery could become depleted if the message unit were run continuously and the solar cell were in total darkness. But, in actuality, the solar cell always is charging during daylight hours, even on overcast days and even while the repeater is playing.



Based on the record to date, the system is expected to last indefinitely, with maintenance being nothing more than checking the solution in the battery at least once a month, twice a month in summer. The solar cell itself is known to have an extended life, experiencing no tangible wear and tear, and requiring only cleaning off or clearing of snow to permit sunlight to enter the cells.

'DO-IT-YOURSELF' CAMPERS KEEP CAMPGROUNDS CLEAN

by Read Kingsbury



BOR Southeast Region photo

The campground in the silent dark little cove in the western shadow of the Blue Ridge was in apple-pie order. Scarcely a bottle top or a cigarette butt could be found in the paths. The trails, the grounds, the campsites—all were neatly bordered and trimmed and raked.

"This is about the neatest campground we have ever been in," decided my wife, Barbara, a conclusion

based on a decade of bouncing about the country in front of a tent-trailer.

The rest of the family agreed, and our awe increased when we saw the sign near the entrance:

"Will you accept a challenge? This area will not be cleaned again, except by you, until October. . ."

Next to the sign was a box of big plastic garbage bags. Campers were asked to take one, use it and deposit it in the dumping bin near the exit.

That was in August. The place was Cave Mountain Lake campground in the Jefferson National Forest, deep in the southwest reach of Virginia. We had pulled down off the Blue Ridge Parkway for an overnight stop, and it was with great reluctance that we continued our journey the next day for the Great Smokies.

But we wondered how the place looked in October, so in due season we called District Ranger Joseph H. Hedrick at his post near Natural Bridge Station.

"When October came," Hedrick said, "we didn't have to do a thing. . .the success of the experiment has been so overwhelming that the system will go into effect next year in all the campgrounds of the Jefferson National Forest."

In Washington, officials of both the Forest Service and the National Park

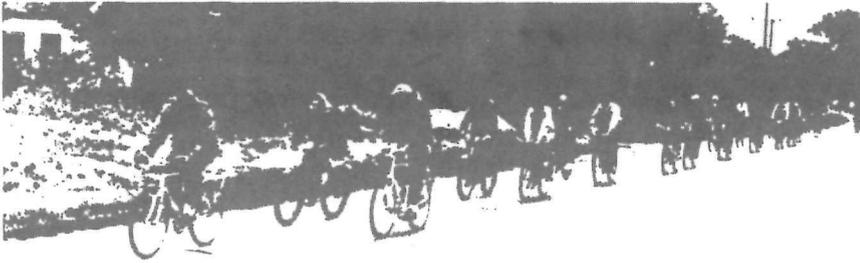


(Placing the cell at an angle will help avert the snow problem.)

The modest cost of Rabenstein's system (both money-wise and environmental-wise) is most impressive compared to those for two other proposed solutions to the problem of powering a remote message unit. A propane generator would have cost about \$1500 and would further have required a small structure (at about

(Continued on p. 27)

(Continued on p. 32)



SAFETY/MANNERS FOR CYCLISTS

From the Bicycle Institute of America come these simple, common-sense hints for safe, accident-free bike riding. Read—and ride-on!

As the operator of a vehicle, you must abide by all the rules of the road familiar to motorists. Besides, it's the law. Respect for the laws will force motorists to respect (and trust) all cyclists. Bicycle Rules of the Road are simple and easy to remember:

1. Ride on the right side of the street, always with traffic, preferably in the curb lane. Watch out for opening car doors. (More sophisticated rules apply in large cities. On a one-way street, cyclists may, if ordinances permit, travel in the left-hand, non bus lanes. Traveling in the right hand bus lane is bad for the lungs, and cyclists run the added danger of being cut off by buses every other block. Check your local ordinances on this.)

2. Ride single file.

3. Obey all traffic signals.

4. Cross an intersection before making a left turn, and walk your bike, if necessary. Look back over your shoulder frequently, and be alert when passing driveways, shopping center parking lots and school yards.

5. Yield to cars and pedestrians. Walkers are more vulnerable than you.

6. USE HAND SIGNALS to indicate a left or right turn or stop. It's the law.

7. If you're riding at night, you must have a light on the front, and a reflector in the rear. American made bicycles, identified with a BMA/6 decal, are factory equipped with large rear reflectors, reflectorized pedals and other reflective devices. A tail light is an added safety precaution and recommended if you are cycling at night in heavy traffic.

8. Never weave in and out of traffic or carry passengers. Avoid large baskets and loads that interfere with the maneuverability of the bike.

If you are in doubt about the ordinances (laws regulating bicyclists) in your community, check with the safety division of the police department.

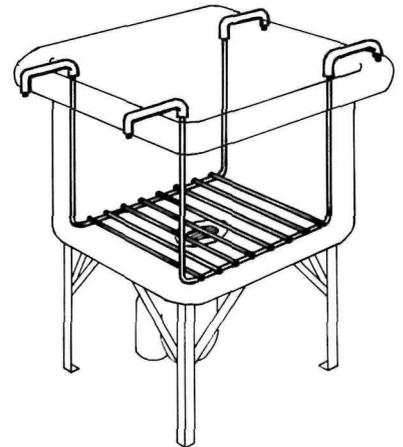


Experienced cyclists in urban traffic listen for sounds from behind and ahead, indicating approaching cars. Listen for changes in exhaust noise of car ahead which signifies a slow down in speed. Out of the corner of your eye watch front wheels of cars alongside or approaching, for some indication they will be turning. Wheels turn before the vehicle actually moves. Watch out for fast-moving, approaching trucks and trailers which create a sweep of wind which can throw you from the bike. If they are moving rapidly, get off your bike and wait out their passing, especially on two-lane roads.

DEEP SINKS PROTECTED

Campers bless 'em, don't want their slop buckets to be blown over by the wind—so they put a large stone in the bottom to weight it down. So what's wrong with that? Nothing. But the trouble comes when these same campers go to dispose of the contents of said buckets (placed under sinks and showers) in the campground restroom. Into the deep sink they upend the bucket and—oops—there goes the stone, making a nice, deep nick, maybe even busting up the sink for good.

Out at Organ Pipe Cactus NM they used to try to solve the problem with wooden grate, resting on the sink bottoms. The grates prevented some of the damage, but were not an ideal answer—they tended to collect odors, and at times disappeared from the sinks completely. And the damage continued.



Acting District Ranger Kenneth C. Patrick has found a better idea. He makes up wire baskets (of 3/8-inch reinforcing rod), with rubber cushioned supports which fit over the rim of the sink. With the baskets in place, damage from the falling stones has ceased, the odor problem has been eliminated, the sink drains remain freer of clogging, and none of the baskets disappeared (in the first year). Furthermore, substantial savings are being realized. Formerly, two or three sinks a year had to be replaced, at an outlay of \$105 per sink, plus \$30 installation cost.

SOLAR CELL...

(Continued from p. 25)

\$500) to house it and would have entailed the constant supplying and re-supplying of bottles of the liquified gas. Total installation cost—\$2000, plus the burning of fuel, with its adverse impact on a wilderness environment.

The laying of a 110-volt cable, from existing power lines 3½ miles to the exhibit unit, would have called for an outlay of about \$7000 (at \$2000 a mile) and, of course, would have exerted an obvious, detrimental effect on the environment.

But the solar cell solution cost a total of only \$163.65: \$120 for the solar cell, \$43.65 for the heavy duty industrial battery, rated at 90 amperes/hour. And its environmental cost was—*negative*. Small wonder that Rabenstein's solution was adopted and that 8 other Park areas have expressed interest in installing similar systems.

The Big Bend naturalist cites two precautions which must be observed in setting up the system as per the schematic: (1) be sure to note the polarity of the terminals on the solar cell, connecting negative to the negative post of the battery, positive to positive; and (2) do *not* attempt to connect the solar cell *directly* to the

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message repeater. The cell does not produce enough amperage to drive the message unit directly, and to connect directly might damage the

FILE/FIND CARDS

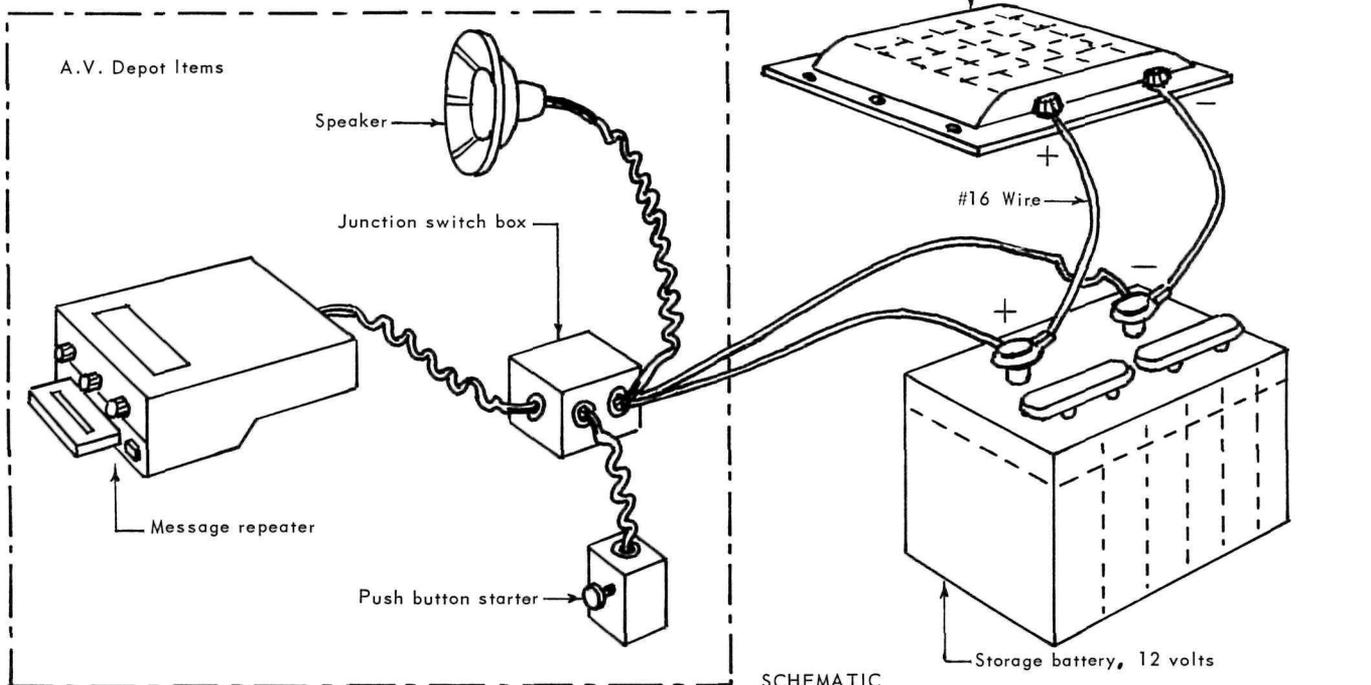
Business cards—so freely passed out—so easily misplaced. How do you find a card for that certain guy or gal or service, just when you need it?

Bernie Bovee, with field operations, Colorado's Division of Parks and Outdoor Recreation, has a system that beats that "throw it in the drawer" routine all hollow. He tapes cards from salesmen and other callers onto a standard-sized 8-1/2 x 11-inch sheet of paper, getting about ten to a sheet. The sheets go into a standard folder, appropriately indexed, and are thereafter within finger tip reach in the office desk file. Neat, yes?

cell. You *must* go through the battery.

As noted on the schematic, most of the items are available through the A.V. Depot. For information about the solar cell, write:

Industrial Communications Inc.
P.O. Box 2106
Odessa, Texas 79760
Attn: Mr. Chas. Wood, Manager.

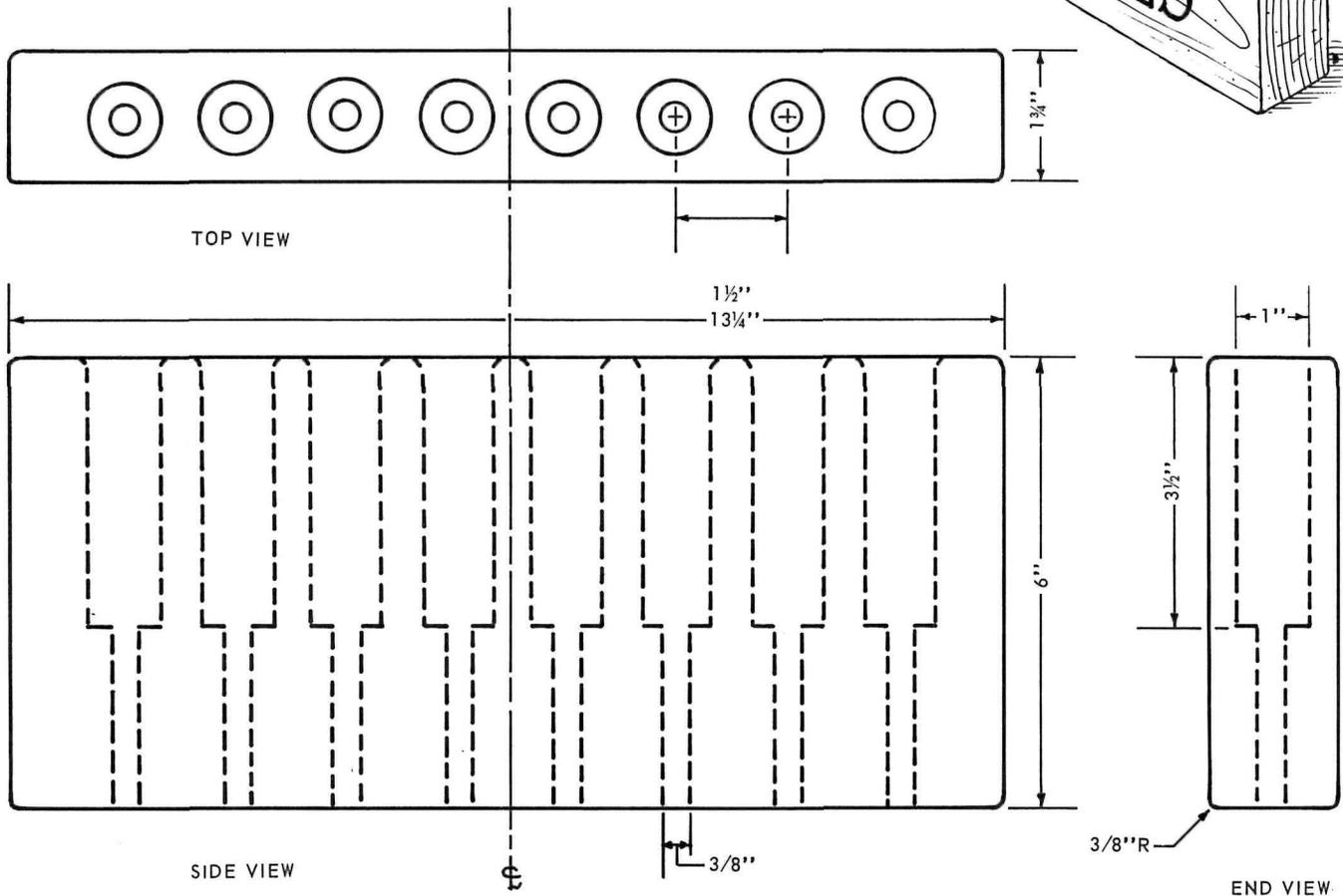
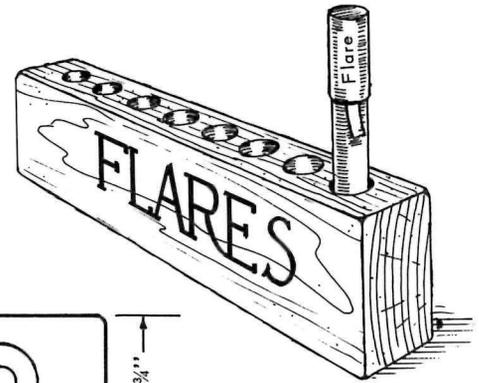


STORAGE FOR HIGHWAY EMERGENCY FLARES

Your vehicle conks out—or you stop to aid a motorist in trouble—or there's an accident ahead. To warn traffic, you need flares—and right now! No time to waste rummaging under the seat, through the glove compartment, or in the tool chest. You want to grab one

or several flares quickly, ignite and stake out.

Johnny B. Nelson, Maintenance Worker at Redwood NP, has an idea that will help meet those emergencies. He's devised a flare holder which can rack up eight 15-minute flares right in sight



against a door panel, or on any flat surface within the cab. No matter who uses the vehicle, he *knows* there are flares on board, because they're in plain view, convenient for ready use. Incidentally, Johnny's holder keeps the flares dry, too, free of the moisture damage they're susceptible to when stored in outside compartments or tool boxes.

A piece of redwood, 1 3/4 x 6 x 13 1/4 inches, will do nicely—it is easily drilled (see drawing) and impervious to weather. Lettering can be white reflecting tape.

SEAT BELT SORTER RED, WHITE & BUCKLE!

Confused by that tangled mess of safety belts and harnesses, especially that three-abreast deal in the front seat of vehicles? Does the wrong buckle get latched to the wrong strap? How about unconfusing it all—with color coding. Don M. Black, Chief Park Naturalist at Joshua Tree NM says

spots of paint or other color (tape, maybe) match up buckle and belt, with driver always using the red set, the middle seat, the white, while the right hand passenger hitches up the blue. Rear seat belts could be assigned other colors or marks. Colorful idea, right?

PAVEMENT MARKING CUM SAFETY REFLECTORS

Editor, Grist:

The Montgomery County Park District, Dayton, Ohio has been using "Scotch-Lane," a pavement marking device. It is very effective and has been adapted to other uses.

The Maintenance Section has been using it to replace glass or plastic reflectors which, due to theft or vandalism, have a short life span. When properly applied it is very difficult to remove or damage. It works as well or better than regular reflectors. Being flexible, it can be wrapped around metal pipe and other objects that present a problem when regular reflectors are used. It can be used on gates, guard rails and posts, low-hanging pipes and beams, low doorways, stair treads, vehicles, and almost any place requiring the identification of a hazardous situation.

We use yellow and white but other colors may be available.

This material allows for an easy, effective, and economical method of attracting attention to a potential safety hazard.

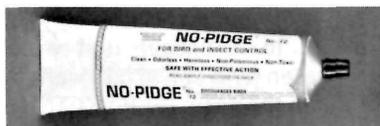
Respectfully submitted,

Chief Larry E. Gilletly
Ranger Patrol Hdqtrs.



P.S. (by editor): For information about "Scotch-Lane," write: Reflective Products Division, 3M Company, 3M Center, Saint Paul, Minn. 55101.

NO-PIDGE MEANS NO PIGEONS, BIRDS, INSECTS or SMALL ANIMALS



The nuisance of birds roosting in or over—and messing—public places in parks and recreation areas may be a thing of the past. At least, that's the claim made for a new bird/insect repellent now on the market under the trade-name of "No-Pidge". "No-Pidge" is a colorless, odorless, non-drying, non-flammable polymer compound which, when applied in a 1/2-inch wide strip to the birds' favorite roosting places, will repel them for 3 to 6 months—without any harm to them. Upon application, it sets up into a tacky barrier, strong enough to make the area "too sticky for comfort for the birds (or small animals), but not strong enough to harm them." Its tackiness, however, will trap insects.

"No-Pidge" is said not to run in direct, hot sunshine and to stay put in the rain. It is applied by

hand from a conveniently held 10-ounce squeeze tube, containing enough for a 40-50 foot, 1/2-inch strip.

For prices and further information, write Middle States Oil Company, 14812 Detroit Avenue, Lakewood, Ohio 44107.

HANDY DIPSTICK WIPER

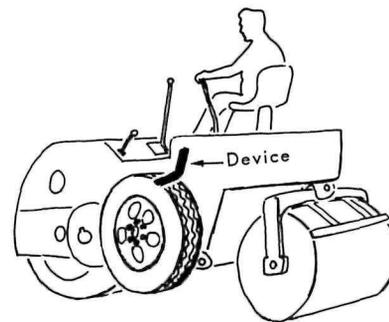


Check oil or transmission fluid anywhere, anytime . . . it's quick and easy with no messy rags or fingers. Installs in minutes with self-adhesive back or sheet metal screw. Costs \$0.95 postpaid. For information, write: Dick Cepek, Inc., 9201 California Avenue, South Gate, Calif., 90280.

SAFETY DEVICE FOR ROLLER'S TRAILING WHEELS

In their raised position, the trailing wheels of a road roller are hazardous because they rotate freely. Should the operator inadvertently step on one of these wheels as he gets on or off the roller, he could lose his footing and perhaps suffer a dangerous fall. (And, if the roller should happen to be left where children could clamber over it, they, too, might fall and be injured.)

So Charlie L. Vance, Engineering Equipment Mechanic, and Columbus B. Cardwell, Automotive Mechanic, at Great Smoky Mountains NP, have come up with a way to de-hazard those trailing wheels. From discarded truck spring leaves, they cut two pieces 2 inches wide, about 1-1/2 feet long, 1/4-inch thick. About six inches from one end, they apply just enough heat (by acetylene torch) to bend each piece 90 degrees without losing the temper. Next, they torch-blow two 3/8-inch holes through each short leg of the angles.



Spring-like tension secures wheel

Now, they raise the wheels to within 1/2-inch of their full "up" position. They then bolt the angles to the frame of the roller (drilling the frame to match the holes in the angles) so that the protruding leg is just contacting the tire treads. With the wheels raised *all the way up*, they then are held *securely* tight against turning, due to the tension of the spring-like devices.

ACCIDENTAL DUMPING OF TRUCKS PREVENTED BY FLASHING LIGHT & SAFETY DEVICE

The danger, mess, and possible monetary loss which can accompany the accidental dumping of a truck are bad news anywhere. So John Reed, a mechanic at Colonial National Historical Park in Virginia has come up with an idea that virtually assures that it won't happen *there*, anyway. (The idea's neat, easy to do, and costs little—

so it just might be the sort of safety device other parks and recreation areas will want to copy.)

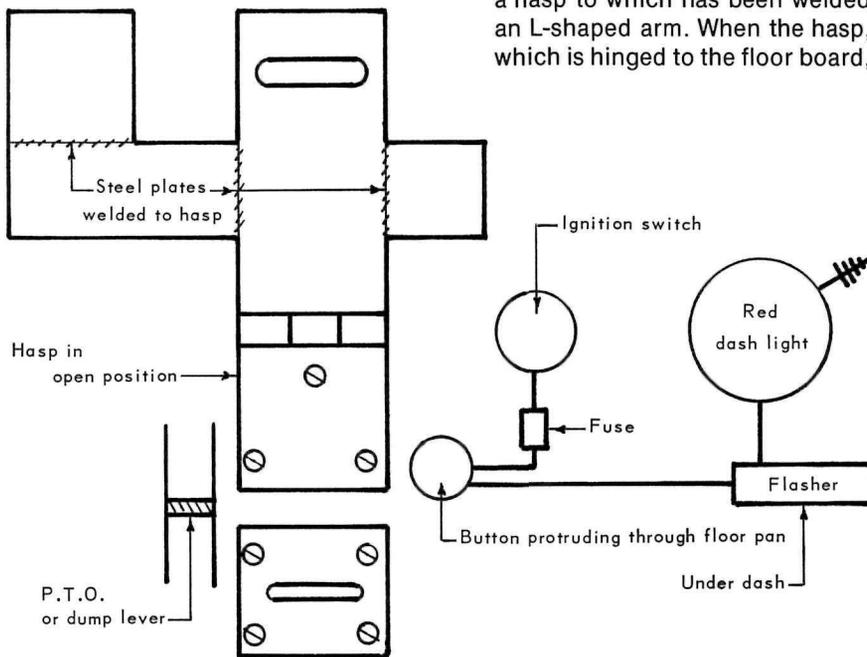
Reed reasoned that if the power lever in the cab which actuates the truck's dump body can't be moved, then it can't be dumped, either, accidentally, or otherwise! So, he designed and built a locking device which makes it impossible to move the dumping lever. The device consists essentially of a hasp to which has been welded an L-shaped arm. When the hasp, which is hinged to the floor board,

is in a closed position over its locking staple, the power lever is prevented from moving because it is confined within a notch formed by the hasp and the L-shaped arm. (SEE SKETCH).

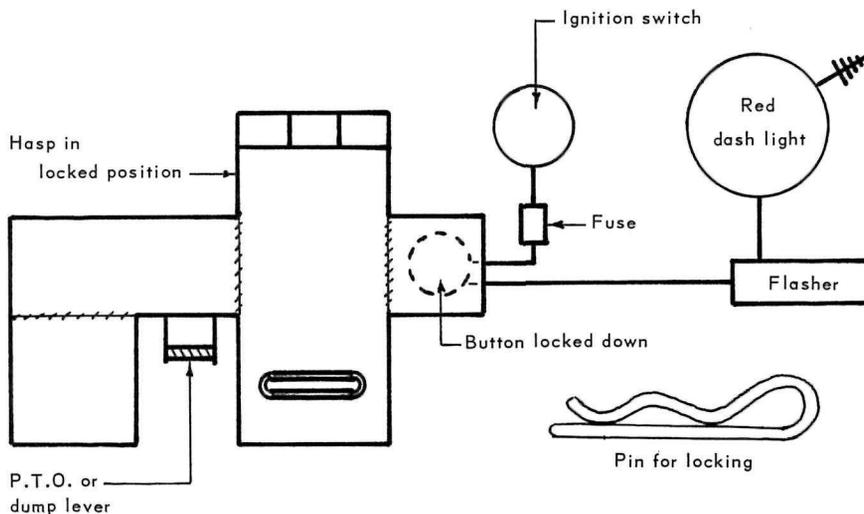
So much for preventing dumping of any kind! The truck *can't* be dumped when the hasp is closed. But, when the operator is *ready* to dump, he simply flips the hinged hasp back out of the way, and the power lever *can* now be moved. BUT—something else happens, when the hasp is opened—a red light on the dash flashes and keeps flashing out its warning that now the dump lever can be operated so be alert! Because Reed added *another* arm to his hasp, this arm engages a switch mounted *under* the floor board (and protruding through). The switch operates exactly as does the dome light switch in the door of a car: pressed down, no current flows; but, released, the circuit is closed, and current flows from a hot wire tapped at the ignition switch to a flasher unit which blinks on and off a red warning light on the dash. (SEE SKETCH)

Material for the anti-dumping safety device cost less than \$4.00—for hasp, switch, flasher, fuse and holder, and dash light, the latter being a small truck clearance light. A short length of wire and less than two hours of labor completed the installation.

They liked John Reed's idea at Colonial. It's been applied to all of the park's dump trucks. It's providing an added dimension of safety to a potentially difficult problem, which apparently had never been tackled before. And it's expected to save money, too, through preventing loss of material through accidental dumping. Reed was awarded a cash prize for his innovative thinking—and action!



OPEN, WARNING LIGHT FLASHING



CLOSED, WARNING LIGHT OUT



RANGERS ON RADAR/ROADBLOCK DUTY ARE SAFER WITH OUTSIDE SWITCH FOR FLASHER LIGHTS



Rangers running radar setups, or assisting other agencies in roadblocks, often stand outside and near the front end of their patrol vehicles while awaiting action. And then, when things start to happen, and

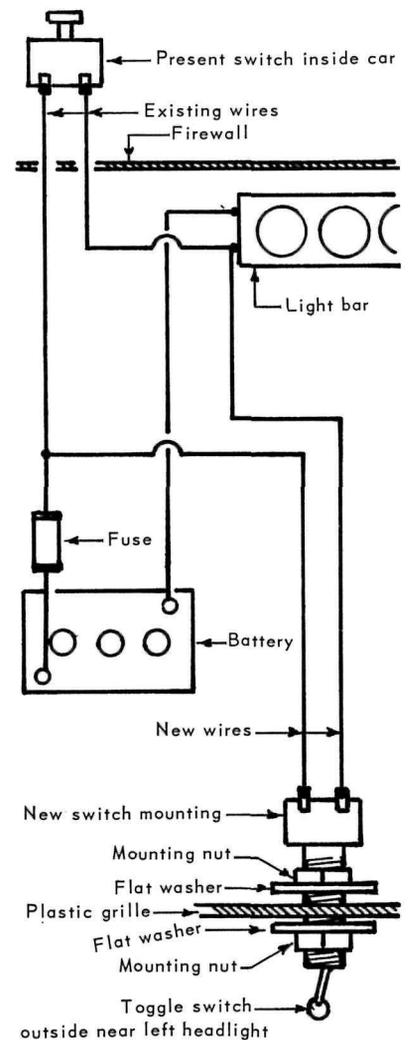
they need to get those blue lights topside flashing in a hurry, they've got to get around to the left side of the car, reach through the window, and flick the switch under the dash. And that could be hazardous duty, walking in or on the traffic lane where a speeder or drunk driver might threaten injury or death.

Park Ranger Albert L. Seidenkranz, on the Natchez Trace Parkway, has found a way to eliminate that hazard, yet retain the ability to turn on the blue lights quickly for radar or roadblocks. On each of their patrol cars, at a modest per vehicle cost of about \$2.00, 12 feet of wire, and 15 minutes of labor, the Natchez Trace rangers have installed a toggle switch *outside* the vehicle, under the bumper opening near the left headlights. Now, the ranger can remain standing near the front of the car and simply reach under and flick on the blue lights without ever moving.

As the picture and schematic indicate, the extra switch is easily in-



stalled, the hardest part probably being drilling a hole through the plastic or metal grille for the switch.



WIRING DIAGRAM

7 LETTERS & ALOHA BUS POLLUTION

Item: Visitor to City of Refuge National Historical Park complains about noise and fumes of tour bus, its engine idling while its passengers wander about, enjoying the spectacular scenery and lush surroundings.

Item: Jerry Y. Shimoda, Park Superintendent, reacts fast, gets letters off to 7 local tour bus companies serving the area, persuasively asks cooperation in killing engines while waiting, points out greater enjoyment for passenger/park visitors *and* fuel savings.

Item: First response comes from one bus company in 4 days, promising cooperation.

Item: Within a week after 7 letters sent, most bus drivers visiting park are seen to cut their engines.

Observation: Sometimes all it takes to solve problems is the asking. A small, but meaningful step

in Hawaii toward solving that toughie-pollution. Aloha nui!



NEW BIRD WATCHERS BOOK

Just published (early 1974), "How to Attract, House and Feed Birds," by Walter E. Schutz. It's an illustrated paperback, costs \$2.95, and it's for backyard bird watchers. It has forty-eight plans for building bird houses and bird feeders, complete with mechanical drawings, photos and step-by-step directions. The book features a list of trees and shrubs that birds flock to and includes instructions on how to build a bird bath. Macmillan, 866 Third Avenue, New York, N.Y. 10022.

BEFORE CASTING OFF, CHECK OFF

Ed Fahey at Bonny Dam SRA in Colorado recommends running this check list before getting your boat underway:

- ___ Air out the boat by opening all hatches and ventilators.
- ___ Check and pump out the bilges.
- ___ Run all compartment and engine blowers.
- ___ Check all fittings for leakage.
- ___ Make sure all provisions and gear are stowed properly.
- ___ Top off water and fuel tanks.
- ___ Check running lights.
- ___ Have charts and navigation equipment ready and on hand.
- ___ Know where you are going and write it down.
- ___ Check your engine or motor for any faults.
- ___ Start engines — record time and readings. Warm up.
- ___ Inspect the engine while running for leaks, fuel and water.
- ___ Get underway when all check list points are ready.

THE SURVIVAL KIT



By Jim Burnett

'DO-IT-YOURSELF' CAMPERS...

(Continued from p. 25)

Service are watching with interest. Like Hedrick they want to free men from emptying garbage cans in order that they might do the many other useful things.

Those were the things that bothered Ranger Hedrick two years ago. "It became impossible to pick up garbage, furnish wood, do maintenance, law enforcement and all the rest on the dollars we received," he said.

It bothered him to have to assign two or three men to empty the garbage cans seven days a week from May to October at the 42-site Cave Mountain Lake campground and at 16-site North Creek campground.

So he decided to let the campers share the work.

He had the garbage can holes at each campsite covered with three inches of concrete (which could be removed if the experiment were a bust), hired a disposal firm to provide and empty the dumping bins, put up the signs and provided the bags.

Campers have done the rest.

"I specifically instructed my men to not pick up anything," he said. If there was a careless camper "the next camper always took care of it."

Some campers even asked for shovels and rakes, which Hedrick happily supplied.

Meanwhile the men who formerly spent their days dumping garbage

were mowing grass, staining buildings and maintaining trails.

The results were noticed not only by us, but by the people at Jefferson Forest headquarters, who had the same problem Hedrick had.

"We have got to find ways of stretching our finances," said Bernard Schruender of the recreation staff. "We find that if we provide a service they (the recreationist) will let us do it."

One service not to be provided next summer is garbage pickup at each of the Jefferson Forest's 351 campsites.

"Except for the carry in-carry out principle impressed on backpackers in wilderness areas, campers in other national forests are not yet expected to help as much as they will be in the Jefferson National Forest," said Melvin Loveridge of the Forest Service's concessions and special uses branch. "But the more experience we have with the system, the more we will use it, I am sure," he added.

At the National Park Service, the news of the Cave Mountain Lake success story was greeted with some envy. "I am not sure we could legally do that—we are supposed to maintain crews to pick up litter," said a spokesman after checking with the operations staff.

(The foregoing is reprinted with permission from June 1973 *Camping Guide Magazine*.)

NO AIR, TRY WATER!

Bill Wendt, who's completing a 3-year detail from NPS, working as a National Parks Manager in Chile (for the Food & Agriculture Organization of the U.N.) has learned that the subconscious can help solve problems. Seems they had just jeeped to Lago Conguillio National Park, arriving there with one tire flattening due to a slow leak, and no spare—it was already in use, having supplanted another bad tire on the trip in. With no air available (compressed, that is), no service stations in sight, what to do?

They had previously had *another*

kind of tire trouble — a water-filled tire on a tractor. So, during a night's sleep, it seems that someone's active subconscious produced a logical solution. If you can fill a tractor tire with water, why not a jeep tire? They did it. Jacked up the jeep, rotated the flat so the valve stem was at the high point, took out the valve core, and held a garden hose over the valve stem, and filled the tire with water.

With the valve core back in place, they slowly drove the 32 kilometers to the nearest town, where *both* tires were repaired—and filled up with air!