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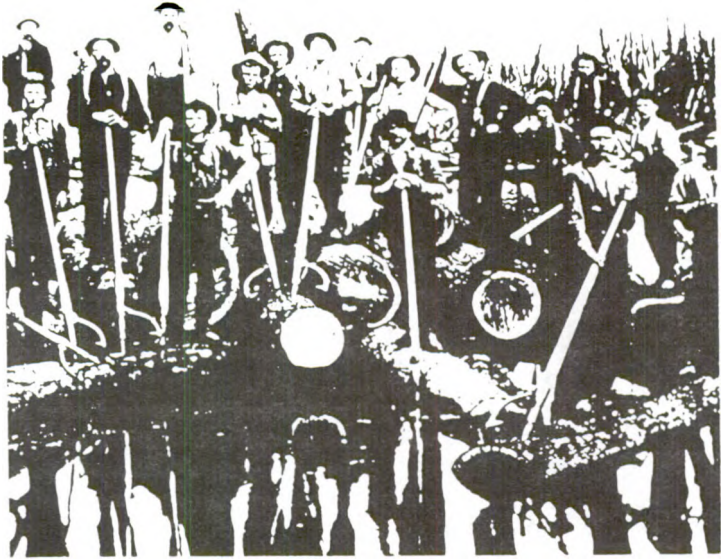
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Timber Tips



Timber Tips



United States Department of Agriculture
Timber Management
Washington, D. C.

PREPARED BY
Forest Service
Equipment Development Center
Missoula, Montana

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Foreword

Under the masthead of the original issues, the stated purpose of *Timber Tips* was to transmit ideas of interest to Timber Management and Forest Survey people across Forest, Regional, and Station boundaries. In over 15 years and in 91 issues, *Timber Tips* was shared widely in and out of the Forest Service under the editorship of Robert E. Reinhardt (retired) and for the last two issues by Robert E. Lease, now in Timber Management, Region 6. Hundreds of readers sent in over 1200 ideas or tips on how they did their jobs better or easier.

The ensuing years have brought new people of many disciplines into the Forest Service. The publication of these old "Tips", as suggested by now retired District Ranger William R. Rines, Malheur National Forest, Region 6, may be new ideas to many of you and should help you do your tasks better, easier, and safer. To this end, the "tips" were selected for their utility for use in the field today.



R. Max Peterson
Chief



Photo courtesy of Mansfield Library, University of Montana

About this publication

Of the more than 1,200 tips published over 15 years, we have included 233 as a representative sample. The complete collection of original tips is on file with Washington Office Timber Management.

Most tips are reproduced as they were originally printed. Some tips received minor editing. Authors are identified as in the original tip. The reference to the original issue is included at the end of each tip. For example, T29 means the tip originally appeared in issue 29 of *Timber Tips*.

References to gender are retained as originally written. The editors acknowledge such references in today's writing are inappropriate in many cases and the contrast reflects obsolescence over the years.

Mention of trade names or products does not necessarily constitute an endorsement by the USDA Forest Service.



Photo courtesy of Mansfield Library, University of Montana

General

Timber Marking Tips

"Mark timber on flat land systematically," suggests Tom Crocker of the East Gulf Coast Research Center, So. Sta. "Start at north boundary of marking unit, work south with drifts running east and west. Mark south side of trees so marks will be most visible in the sun and consistent to locate." T3

Finding Your Vehicle

"When working strange country, let a woodsman's tip save you a long walk," notes Bob Cron, energetic Supervisor of the Kootenai Forest (R-1).

"Suppose you park on a generally east-west road. On your return, plan a route that will bring you back either east or west of the pickup, not *at* the pickup. Then you will know which way to go when you hit the road. Saves walking one direction, deciding you're wrong, hiking the other way, and eventually finding it was only a little farther than you'd first gone.

"Same principle applies to navigating a boat or plane to a point on a shoreline, or finding your hunting camp on a stream or road," says Bob. T34

Cold Drinking Water

"The evening before work fill your canteen $\frac{3}{4}$ full of water and place in the freezing compartment of your refrigerator. The next morning fill with water and you'll enjoy real refreshing ice water for hours," says Francis Keiling, West Va. Conservation Comm., Beckley, W. Va. T21

Remove Pitch

"Rub on oleo, lard or 'a high-priced spread' to take off pitch", advises Glenn Smith of the Lassen Forest (R-5). "Follow up with soap and water. Presto!" T27

Display Your Name

"Getting to know you": another idea for running "clean" sales comes from Gene Tomlin (Craig District, So. Tongass, R-10). "Operators often feel embarrassed when they cannot remember a forester's name. Make it easy for them: Paint or write your first and last names on your cruiser jacket so they get to know you better. Your first name on your tin hat also helps."

Mark your tin hat with a felt tip marker, spray with plastic, or use the plastic embossed strips. T17

Rock Pit Trespass

"Check rock pits at a glance for illegal removal of rock," suggests Denny Noonan, Dist Admin. for the Washington State Dept. of Natural Resources.

"You'll never remember what the pits looked like before. But squirt a line of paint across the face with a tree marking gun after each operation.

"If trespassers re-mark the pits themselves, try several less obvious markings in scattered patterns. Sometimes these give rock 'borrowers' a second thought," says Denny. T89

Insect Boxes

"Your empty 35mm film cans make good bug boxes," says Joe Tekel, Clinch Distry., Jefferson Forest (R-7). T21

Protecting Signs From Animals

"Minimizing porkey and bear damage to signs reminds me of our attempts in the early 1940's," says Al Eckes, now in the Div. of Coop. Forest Fire Control, S&PF, NE Area.

"Signs on the Ammonoosuc Dist. of the White Mtn. Forest were continuously attacked by bear. Not only were the routed signs pulled down from the posts but frequently bear took one or two healthy bites out of the pine boards, destroying the signs. Once the guard installed three new brown-stained trail signs on the Cherry Mtn. road one day. Next morning all three were clawed, bit and pulled down.

"Nothing we tried would keep bear from pulling down the signs. But signs coated with brown stain containing a lot of black pepper suffered less from biting damage. The slats could be replaced on the post with the directions at least legible.

"I can't remember the stain mix ratio, but it took lots of pepper and when dry the sign had a rough finish. Maybe it might work on *your* bear!" Al suggests. T77

Cone Preservation Techniques

"In an earlier *Timber Tip* I noticed the problem of keeping true fir cones from coming 'unstuck' in collections," reads a letter from C.L. Clymer, Exrn. Economist in Forest Products, Okla. State U.

"I still have some after 25 years. They have been handled and shipped many times, are still intact, with good color.

"When fresh picked I dipped them in paraffin melted over hot water and allowed it to cool somewhat before I slowly submerged and withdrew the cones." T61

"True fir cones come unstuck when dried as you and everybody else has found," notes Dave Mattila of the Randle Ranger Dist., Gifford Pinchot Forest (R-6).

"Various methods, such as preserving in formaldehyde, wiring them together, etc., haven't worked if the cones were handled much.

"I succeeded in preserving everything but the color by spraying a cone with clear plastic Krylon. I sprayed it thoroughly morning and evening and the spray penetrated under and around the scales, much better than brush lacquer," says Dave, "tho the green color changed to a straw color as the cone dried." T39

Photograph Your Accomplishments

"Prepare a Ranger District year book of photos of your District -- bridges, plantings, thinnings, harvest, release cuttings, etc.," says Ken Smith of the Modoc (R-5).

"Helps a new Ranger tie to what's been done in the past and the history of the District. Otherwise we lose too much between transfers." T32

Multiplication Check

Check your multiplication George Jackson's easy way (and weird) way. (George is the T.M. - W.O. Timberbeast expert in tree grading, scaling, check cruising, etc. stationed at Portland, Oregon).

Numbers do convenient things for George. "With more frequent use of machines to multiply, we need some easy way to check," he notes.

Here's one of his techniques:

1) Multiply any two sets of figures.

(Example: $2364 \times 185 = 437340$)

2) Reduce the multiplicand to a single digit by adding across. (In above example, $2+3+6+4 = 15$, then $1+5 = 6$.)

3) Do the same thing for the multiplier. ($1+8+5 = 14$, then $1+4 = 5$)

4) Multiply these two single digits and reduce the result to one digit by adding across. ($6 \times 5 = 30$, then $3+0 = 3$)

5) Reduce the result of your multiplication to one digit by adding across. (Above answer, 437340 reduces to $4+3+7+3+4+0 = 21$, then $2+1 = 3$.) If this number is the same as the one obtained by step 4, multiplication is OK.

"The number 9 seems to be a magic one," says George.

"When *either* the multiplicand or multiplier reduces to a 9 no further reducing is necessary. (For example, in $1350 \times 28 = 37800$, the multiplicand is $1+3+5+0 = 9$ and $3+7+8+0+0 = 18$ and $1+8 = 9$.)

Now, George, why? T43

Paper Stapling Idea

Blessings to the District Ranger who took time to call our attention to proper paper stapling technique. (We lost his note so can't give him credit more than this.)

"So many papers are stapled wrong," he wrote, "apparently because no one ever analyzed what happens when you flip the page. If someone places the staple in the corner, neatly parallel to the top, the strain all comes on one side of the staple and the paper starts to tear. Doesn't hang right either. Same thing if the staple's vertical.

"But staple at a 45 degree angle about an inch from the corner. The strain of flipping the page is distributed evenly on both prongs of the staple, the page hangs properly, and doesn't get so dog-eared," he wrote. (Cast an eye on YOUR baskets if you don't think he has a point!) T83

Reduce Windfalls - Clearcuts

How we can minimize windfall around clearcuts concerned Bob Alexander of the Ry. Mtn. Sta. so he developed some ideas that deserve attention.

He notes that whether trees will blow down depends on many things other than wind velocity (tho we know from our Columbus Day blow that that could cause some too).

Other than the usual considerations of species, soil conditions (such as drainage and depth), tree shapes, and history of development in relation to wind, defects, rot, and injury - most of which we're aware of, Bob emphasizes other findings we should consider in sale layout. Biggest thing we can do is to recognize and lay out our sales to minimize the effects of wind hazards intensified by topography.

In doing so, we need to remember several basics of wind hazard:

a) Prevailing storm wind direction (leeward side accounted for two-thirds of blowdowns).

b) Wind aspect (more windfall on upwind aspects).

c) Slopes (cutting boundaries on flats and gentle slopes were best).

d) Stocking and age (open grown stands and younger ones are most windfirm).

e) Uniformity of slope (greatest windthrow if slopes don't change abruptly).

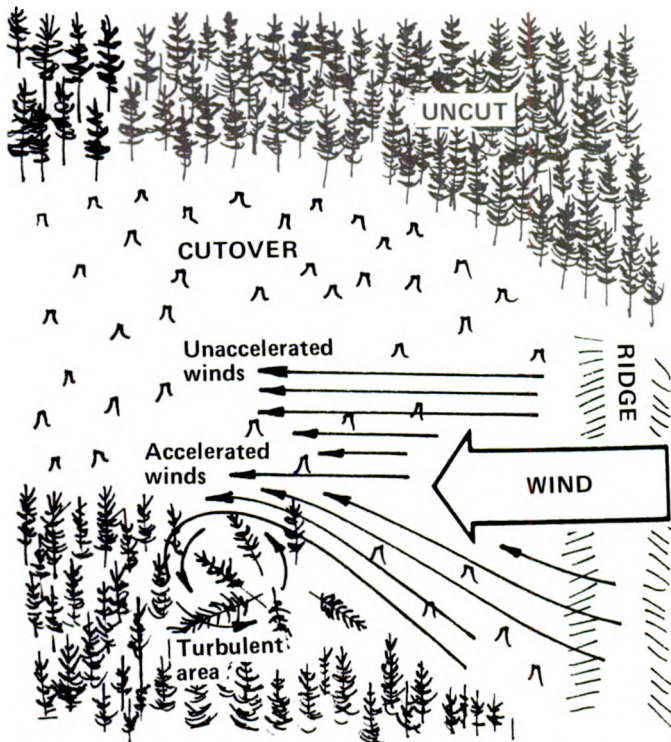
f) Position on slope (more loss on lower slopes than middle ones, more on middle than upper. But least near stream bottoms).

Topographic wind accelerators caused heaviest windfall. These winds blow thru gaps and saddles (New Englanders call them "notches") or up narrowing valleys oriented so strong storm winds sweep free. Such narrowing valleys constrict winds both horizontally and vertically.

Windfall *decreased* as size of openings *increased*. Wide strips and large patches sustained less damage *per chain of butting boundary* than narrow strips and small patches. And, of course, large openings have fewer chains of perimeter for their area.

Cutting boundaries perpendicular to the contours were harder hit than horizontal ones.

Sale conformation is important. Don't pinch or funnel main storm winds against a reserve strip as was done below:



Bob listed the windthrow hazard components in two tables you might like to use as reminders:

Windthrow Hazard

Above Average

1. Leeward cutting boundaries
2. Narrow strips and small patches
3. Cutting boundaries at right angles to the contour
4. (a) Saddles in ridges
(b) Ridgetops
(c) Lower and middle slopes
5. Slopes facing the wind
6. Moderate to steep slopes
7. Abrupt changes in direction, long straight lines and square corners, or indentations in boundaries
8. Shallow soils
9. Slowly drained soils
10. Stands of old trees, especially if defective
11. Trees grown in forest stands
12. Special topographic situations conducive to the acceleration of the wind

Below Average

1. Windward cutting boundaries
2. Wide strips and large patches
3. Cutting boundaries parallel to the contour and along roads
4. Stream bottoms and upper slopes
5. Slopes facing away from the wind
6. Flats and gentle slopes
7. Irregular or smoothly curved boundaries
8. Medium and deep soils
9. Moderate to rapidly drained soils
10. Young stands of sound trees
11. Open-grown trees T46



Unsafe Equipment

There have been suggestions that the Forest Service do away with all use of the axe because axes are a safety hazard. This is another example of some of us going overboard on safety -- "pseudosafetyitis."

Then we actually found one forest where all of the spuds had been sawed off the ends of Hallin Hammers because the forest checkscaler figured they could be dangerous.

Of course they can be dangerous! So can an axe or a saw or a truck or a parachute or even a cup of hot coffee. The same is true of many other things we encounter and use daily.

The true safety angle with anything is to *recognize* its potential dangers and handle it accordingly -- not deprive ourselves of its usefulness. If a tool is right for the job let's learn to use it -- *safely*. T28

Wasp Sting Relief

"Bob Echols and Jim Reilly just about nailed down emergency wasp sting treatment in previous *Timber Tip* says Don Gordon of the P.S.W. Station at Redding, California.

"Neatest trick in line with their recommendations is to carry 2-3 ammonia ampules taped inside your hard hat or kept in a shirt pocket. They're an excellent alkaline compound to neutralize the formic acid in the sting. Readily available as first aid kit components.

"I had a severe reaction -- my whole body swelled -- after just one yellow jacket sting. The M.D. said the big danger to people with severe reactions is to be stung on the head or neck, in which case our throats can swell and choke us within a half hour. He gave me some antihistamine pills to carry (wrapped in plastic, taped in my hard hat)." T85

Fluorescent Colored Clothing

Hunting accidents cut in half with fluorescent orange! In a southern Maine test area where hunters were required to wear some garment of fluorescent orange, over the last four years visibility-connected hunting accidents were only half those prevailing before orange was required.

And out of twelve injured hunters, eleven were wearing only an orange cap, but one was wearing an orange vest.

Evidence is clear that loggers, hunters, foresters and others in the woods during the hunting season should wear both an orange hat and vest, especially in early morning and at twilight.

(Lifted from Maine Extension Forester Lew Bissell's "Forestry Facts") T88.

Dry Sand For Icy Conditions

"Now's the time (before winter) to pack up a supply of dry sand and gravel for emergency use when roads and parking lots become ice covered," says Bob Parker, Asst. General Counsel for R-1. (Welcome, Bob!)

"A clean way to store such a supply, actually in convenient disposable tools for spreading it, is in quart or half gallon paper milk cartons. Fold the tops flat and hold with a rubber band to keep the sand in and moisture out," says Bob.

"Fit them into a medium-size pasteboard box for storage and you're ready for cold weather." T70

Rear Window Cleaner

"Rear windshield get heavy with mud or dust?" asks Henry Deutsch, Dist. Extn. Forester at Kansas State U. "It's a safety hazard you can do something about!

"Carry a small-size plastic dishwashing soap bottle that has a nozzle (like Lux, etc.). Fill it with a soapy water mix (Mr. Clean or relative).

"The jet of soapy water will move the mud without fuss," says Henry. T48

Safety

"Over a year since I sent any 'tips,' writes alert & faithful idea-producer Gyde Lund of the Seattle Unit, Pacific Northwest Station. "So here's an accumulation:

a) Carry CA-1 forms & list of authorized doctors (with addresses & phones) in your first-aid kit. Could save some important time.

b) Smokers -- Don't get all fired up! Use caution around pressurized insect repellent. Give the air time to clear before lighting up.

c) Check tire chains for fit before you must put them on. On new tires old chains may not fit. And try on new chains -- they might not fit either." T73

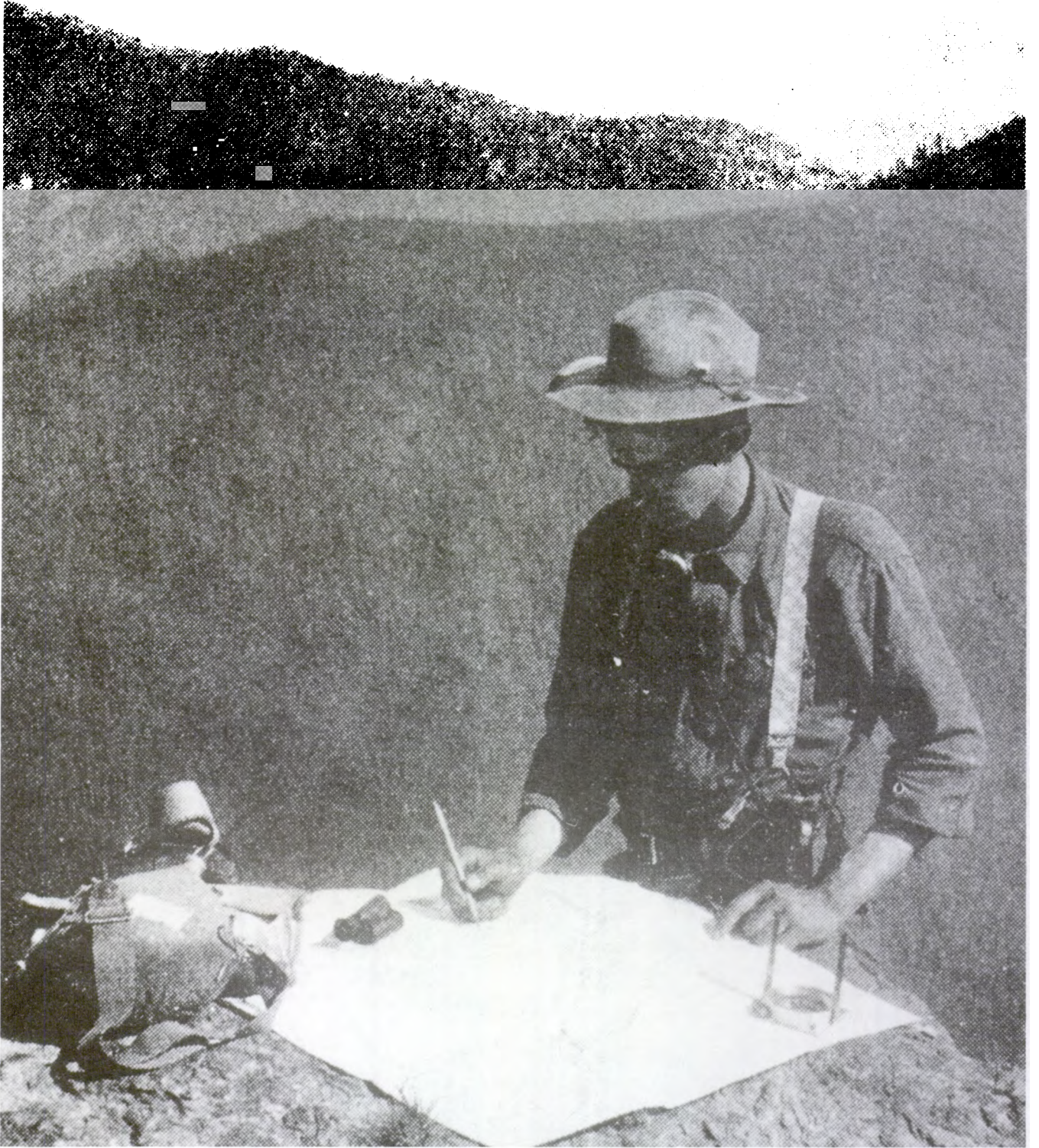
Inflating Low Tire

Puff CO2 in your low tire instead of grunting on a pump. "A 10 oz. fizz bottle of CO2 gas with tire valve adapter hose will inflate your tire much faster than you can otherwise," says Art Benoit, Forester on the San Carolos Indian Reservation in Arizona.

"It's small enough to fit in the glove compartment and will inflate the tire in seconds -- maybe even let you get off a bridge without wrecking a tire.

"As a multiple use tool, it can also cool or freeze the flesh around a snake bite, or blow out a small fire. "Vehicles with larger tanks of CO2 fire extinguishers need only the special adapter valve hose that costs about a dollar," notes Art.

"Buy the 10 oz. tank of CO2 for a few dollars at any fire supply house." T29



Photos, Slides & Maps

Aerial Photo Erasures

Trouble erasing grease pencil from air photos? "Then carve a 'tread' on your eraser," says Hoyt Hall (PNW Sta.). "Score the end of your eraser in a cross-hatch pattern with a knife. Make the cuts about one-eighth of an inch deep, one sixteenth of an inch apart. Eliminates smearing the grease line and clogging the eraser. Use a soft eraser to avoid damage to the photo emulsion." T14

Photo Marking Pen

At last! A bright photo marking pen that erases without damage, is water resistant, has a see-thru mark! They are Micropoint, No. 960 unimark microdraft pens; colors are red, green, black, and blue.

We're indebted to Richard Clabaugh of the Mad River R. Dist., Six Rivers Forest (R-5) for calling them to our attention.

"The pens are a vast improvement over grease pencils and have proven excellent for work on aerial photos!" says Rich.

Ed. Note: We took our samples in to demonstrate to Betty Causey, (W.O. Engineering) a true connoisseur of stereo photos who appreciates such things -- and could hardly escape with them again! T79

Slides -- Right Side Up

Can you tell if your colored slides are "heads-up" in the dark? Rol Rotty (W.O. S&PF) has a simple method: With a paper punch he notches the upper right hand edge of the paper mounts (as they are ready to go in the machine). If one or more slides aren't right you can tell by a glance -- or feel the "wrong" one with your thumbnail in the dark. T79

Slide Cleaner

Tips for cleaning slides: Blowing on slides to remove dust which seems to cling to inside edges of slide mounts, and which seems to elude cleaning efforts with a brush, can result in moisture spots on the slide surface.

"A thoroughly cleaned and dried squeeze-type plastic bottle (such as a deodorant type) provides a concentrated blast of air which removes dust," notes Duane Nelson, Visual Expert with the Federal Extension Service in Washington. T41

Black Colored Slides

"Black slides can 'professionalize' your slide presentation," says Lorin Hearst (S&PF-RO-R-1).

"When switching from slides, to movies, to overhead projectors, or to charts, don't distract your audience by having someone turn off and on the projector, or flash a white glare on the screen.

"Merely insert a black slide in the series (one of your natural 'goofs' or a piece of tagboard of the proper thickness & size) and allow the projector to run 'at the ready' thruout the entire program. This has helped make our presentations more interesting and improved continuity," Lorin says. T63

Flip Top Stereoscope

"A good gadget for P.I. work in the woods is a Flip Top stereoscope," declares Dave Bernstein (F.Survey, T.M., R-6). "The lenses are attached to a hinged frame strapped to your forehead. You can use photos in the field without the usual balancing act. Merely flip the lenses out of the way for a look-see around.

"But I found another use for this handy tool: to count the 10-year growth on slow-growth increment cores. Normally you need a hand for the core, one for the lens, and one for marking off the years or decades. By using one eye and my Flip Top I get a 2x magnification. Works Fine!" T77

Air Photo Measurements

"Measure 1:20,000 photos directly in chains with a \$.05 clear plastic ruler marked in millimeters," says S.J. Ursic of Tallahatchie Research Center (So. Sta.). If photo scale is accurate (3.168 in. per mi.) correction is negligible, (-0.58%). T3

Keep Track of Photo Aids

"Trouble keeping track of transparent aerial photo aids on a cluttered desk?" asks Ron Roginske of Kelly Creek Ranger District, Clearwater Forest (R-1).

"Tape a couple small pieces of phosphorescent card stock to the aids. Save time searching for them. They'll really stand out!" T65

Color Coded Photo Scales

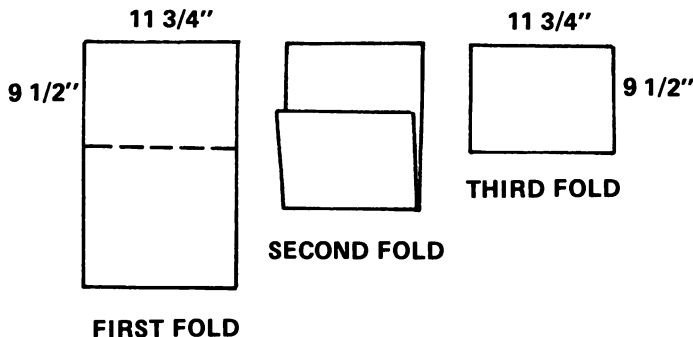
"Also color code the aerial photo scales with markers of various colors, then cover marks with transparent plastic tape for durability." T72

Storing Topographic Maps

"Trouble storing 7½ inch topo maps due to lack of a map file? I found that storing them in map tubes made them difficult to unroll and work with. Here is how I solved my problem," says Walt Morrill of NE Area, S&PF at Syracuse NY.

"Starting in the upper right corner of the map, measure across the top 11¾ inches; then measure down the right side 9½ inches. This is the same size as the standard square cut kraft folder. Use one for quick measurement.

"Next fold the map down the middle on the 11¾ inch mark (with the map side out). Then fold across the map on the 9½ inch mark. The third step is to fold the bottom of the map up to the 9½ inch mark. This gives you a folded map that is 11¾ inches x 9½ inches with the map name in the upper right corner. All your maps will be the same size, will store neatly in a regular file drawer," notes Walt. T73



Azimuths On Aerial Photos

"Finding azimuths for travel routes on aerial photos is fast and accurate if you'll use a drafting machine," asserts Bob Strickland, Kisatchie Ranger Dist. (& Forest, R-8) at Natchitoches, La. (See if you can say it first time!)

"Align the scale of the drafting machine along any feature on the photo for which you know the azimuth, such as a straight stretch of road, etc.

"Set the lower azimuth circle to this azimuth and lock it in the machine. Then move the scale to any position on the photo & read the azimuth directly on the upper azimuth circle.

"This method's especially useful if you have to lay out several travel routes on one photo," Bob advises. "of course, remember there's less photo distortion near the middle of the photos and on relatively flat land." T75

Lettering Guide

"Spend too much drafting time aligning and spacing your lettering? 10x10 square profile paper under your work makes a fine preconstructed grid," says Don Smith of the Umpqua Forest, (R-6).

"Use a light table for heavier papers or draw on light-weight paper and fasten it to the chart with paper cement." T22

Light Table

Easy-to-make light table suggested by Gene Avery of S. Sta.. Sandwich a sheet of frosted plastic between two sheets of window glass -- bind edges with tape. Install a couple of fluorescent tubes in a desk drawer or shallow box and fasten the "sandwich" to the top. If in a desk drawer, mount glass flush on a railing inside the drawer. Saves 50% to do-it-yourself -- and if in a desk drawer it's out of the way. (Line the drawer with kitchen foil to make a "bright box".) T8

Aerial Photo Copies

"Your office copying machine may make a pretty fair copy of aerial photos," notes Ken Smith, long-time Timber-beast of the Modoc Forest (R-5).

"If it does, you can better your communication between S.O. and Ranger, to smoke chasers or fire crews," advises Ken.

"Also you can pass on, discuss, or preserve information that can be shown on an aerial photo.

"Just zip off a print, use colored pencil to portray the situation. Cost is only pennies, and the picture saves lots of writing," says Ken. T66

Stereo Without Stereoscope

"Ever break your stereoscope in the field? Or forget it?" asks Jerry Allen of the Helena Forest (R-1).

"Don't despair. With a few minutes practice you can see the photos in stereo without one. And as long as it's just an occasional thing, your eyes won't migrate like a flounder's -- no matter how they feel.

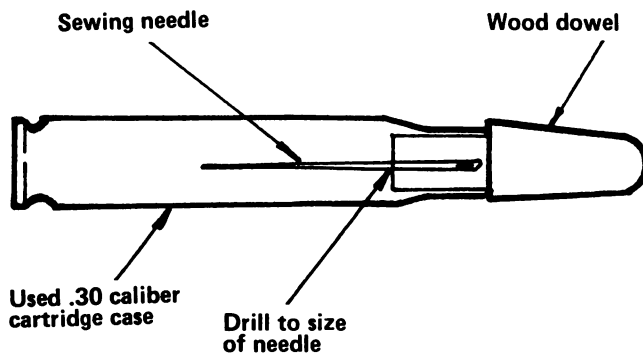
"Hold your photos side by side, as you would with a stereoscope, so that identical spots on the photos are about the same distance apart as your eyes.

"Then practice until you are able to look at one spot with one eye -- the other spot with the other eye. When you succeed, the photos will snap into stereo.

"You won't have magnification this way, but you will be able to view 90 percent of the effective area in stereo from any position." T38

Photo Prick

"I'll never be without my 'photo prick' in the field," declares John Caragozian (Sequoia, R-5). Doesn't "needle" you at awkward times -- or in awkward spots. Here's how we make 'em (actual size). T10



AERIAL PHOTO PRICK

Aerial Photo Protection

"Less than three cents will protect your 9½ x 9½ inch contact aerial photo prints," says Leon Erbe, Area Forester of the Michigan Dept. of Natural Resources at Mio.

"Dow Chemical Co. has marketed a plastic food storage bag ten and seven-eighths by eleven inches under the name of 'Ziploc Bags'. This is a sealable, waterproof, and reusable plastic bag.

"We have found the bags useful when carrying aerial photos in the field, especially in bad weather." T84

Inexpensive Engineer's Scale

"The standard F.S. notebook can prove a handy substitute for an engineer's scale," says Phil Glass of the Bridger Forest (R-4).

"Each square will equal 10 square chains on a 2 inch to the mile planimetric map." T18

Mapping Minimum Sized Stands

"Your stand mapping project requires strict observance of a minimum size stand?" asks Roger Dennington -- G. Wash. N.F. (R-8).

"Draw several 'minimum size' figures on your plastic photo carrier with grease pencil, identify the scale of the photo on them.

"Then as you map stand boundaries on the aerial photos in the field you can quickly compare to see that all stands are large enough," Roger says. He also says a good pencil is the "Mars-Omnichrom" from Germany. T69

Keeping A Map In Rig

"Trouble keeping a map in your rig?" asks L.J. "Whitey" Tourtellot of the Shasta Lake District, Shasta-Trinity Forest (R-5).

"Staple a district map (or forest map if it will fit) to the ceiling of your cab. Orient it with north toward the rear so you can read it easily.

"Place ownership boundaries or other needed information on the map before installing it. To ensure a clean and permanent map, spray it with Krylon plastic also.

"If ceiling is metal, attach with rubber cement, masking, or electrical tape," says Whitey. T53

Section Lines On Photos

"Needle your air photo with a sharp hatpin to show section corners or other points," advises Phil Schlamp (Coeur d'Alene Forest, R-1). "Then place the photo on a light table and draw the section lines between the 'stars' -- the lights coming thru the pinholes. Makes it much easier than using pencil marks which are hard to find on a photo." T9

Dot Counting Hint

"Easier to dot count large areas subdivided into many smaller ones if you'll first color one or two of the larger types. Use just enough tint to identify the type through the overlay. Lets the counter concentrate on sorting out and identifying the small areas.

"This method probably cuts our counting time one-third," says Ray Dougherty of the Shasta-Trinity (R-5). "And certainly helps accuracy." T22



Equipment

Clothing

Hard Hat Bill Glare

"Your hard hat bill glare at you when you look up at tree tops on bright days?" asks John Woerheide of the Pecos Ranger District, Santa Fe N.F. (R-3).

"To eliminate the glare, spray the underside of the bill with soothing, green spray enamel, preferably dull finish." T74

Cleaning Pitch Spots

"Timberbeasts: Are your wives 'beastly' after washing or ironing your pitch-splotched clothes?" asks Pat Kirkpatrick, Regional Checkscaler, R-5. "Most are, with reason."

"But make them happy. Buy some waterless hand cleaner -- the kind you clean scalesticks with -- and tell them to rub some on the pitch spots before throwing the field clothes in the washer. They'll be surprised at how the pitch and grease spots too, will come clean!" T72

Zippered Chaps

"Install zippers in your chainsaw chaps" advocates Leo Witthoef of the Walker R. Dist., Chippewa Forest (R-9).

"Because leg size of a 'chapped' pants leg is small, shoes & overshoes must be removed, and the small size also binds trousers, pulling them up toward the knee," Leo notes. "And in cold weather you can frost your toes during the ten minutes time it takes to get the chaps on. (Minnesota winters are *cold!*)

"But open the seams on the back sides of the chaps, sew in zippers, and your troubles are over. Takes just a minute to put on or remove chaps, and any shoe repair shop or upholstery store with a heavy sewing machine can sew them in for a total cost of about \$4 per pair." T82

Shin Guard Straps

"Our shin guards slipped to the side of the leg until we replaced the regular straps with elastic straps used on guards for hockey players and baseball catchers," says Norm Johnson, Bergland Ranger District of the Ottawa Forest (R-9). T36

Non-Slip Waders

"Put felt soles on your waders," says Jerry Frank, (Yaak R.D., Kootenai NF, R-1).

"Roughen the soles and apply 'Flex-O-Fix' liquid rubber both to the soles and to the felt innersole liners.

"For stream gaging, fishing, or any river wading it sure makes a difference on mossy or slimy rocks," says Jerry.

"Be sure to roughen the rubber surface before applying the liquid rubber; it's the secret of permanent fastening." T26

Pocket Sized Waders

Portable waders in your pocket: Ever cross a wide stream and wish you didn't have to get your leather boots wet? Or wonder during the "mud" season whether to wear leather boots, rubber boots or "pacs"?

Ed Vinoski of the Greenbriar District, Monongahela Forest (R-7) has a solution:

"Two large heavy-gauge plastic bags carried in your packsack or pocket can save you wet feet and perhaps other miseries if you are wearing leather boots and have to wade a stream.

Says Ed, "A plastic bag similar in size and gauge to that used in taking soil samples should provide adequate protection. The plastic is heavy enough to resist tearing and can be dried and returned to the pocket or sack immediately after use." T20

Cold Hands

Do something about your cold hands! Ed Wyman, Prof. of Forestry at U. of Conn., notes that one of his students had his girl-friend knit him a right-hand mitten with no thumb and a couple of small buttonholes in it. He then shoved a pencil right through the mitten and kept notes with his hand inside and his fingers warm. T20

Hard Hat Water Drip

"Water drip from your hard hat brim onto your notes?" asks DeWitt McClinton of the Bankhead Forest, Alabama (R-8).

"Attach a sponge rubber sweat evaporator around the crown of your hat with the pad in front. Squeeze it out as needed -- and the dripping will be almost entirely stopped," he says. T61

Keep Notes Dry

"Cut a slit in a square of clear polyethelene plastic and carry it in your cruise vest," suggests Dehn Welch (TM, R-6).

"When it rains, slip the slit over your head and keep your cruise cards and self dry when you're writing." T23

Keeping Dry

"Where it rains 90 inches a year you really test rain clothes," notes Rex Baker, Mapleton District, Siuslaw Forest (R-6). "I finally bought the bib-type rain pants and they're just right. You can leave your rain jacket open for comfort and access to your vest without getting your shirt front wet.

"I glued a big pocket to the inside of the bib. It's large enough to hold the aerial photo case or your tatum or both.

"After losing 3 plastic photo scales, I scratched the scale right on the clear acetate of my photo case and filled the scratches with India ink.

"A couple or three circles, one within the other, also help me to estimate yarding distances during layout of logging shows.

"I also made my cruiser's vest more handy for those bigger objects (aerial photo case, big lunch, rain clothes, etc.) by installing a zipper full across the top of the big back pocket." T46

Vehicle Chaining Tip

Those fall rains will cause you to thank Warren Williamson of the Superior District, Lolo Forest (R-1) for his idea:

"Tired of mud and water dripping on your sleeves while unchaining your vehicle?" he asks.

Keep two rubber bands and two plastic bread wrappers in a roll in the glove compartment to put over your hands when unchaining. Plenty of room for fingers to unclasp the chains," Warren says. T46

Better Redy Mapper

Use pinking shears to put a denticulated edge on the disks of your Redy Mapper.

"Saves time and temper on cold or rainy days," says Olyn W. Gould, P.S.O., Salmon River District, Klamath N.F. (R-5).

(Note: Warm the shears and the disk to about 110 degrees to prevent cracking plastic.) T30

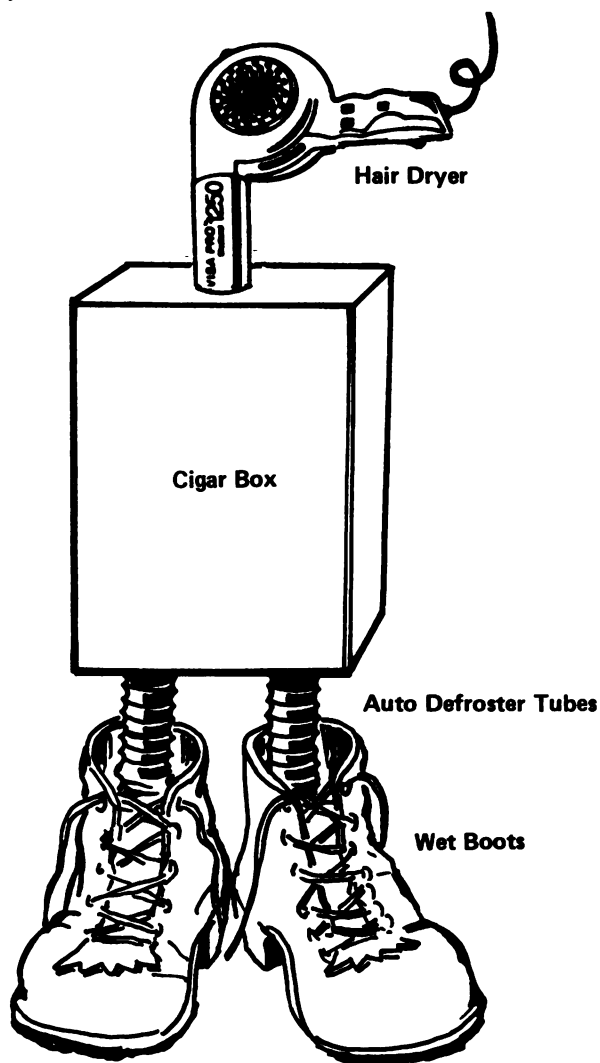
Boot Toaster

And from one of Nesbit's "plotgetters", Leonard Edwards, comes a drawing of what we hereby dub 'THE EDWARDS BOOT TOASTER', a device we've needed forever!

Leonard says it will dry out a pair of boots overnight even if they're dripping wet. And if boots are well greased, they won't harden or stiffen.

Leonard's BOOT TOASTER consists of: 1) two lengths of automobile defroster hose about an inch shorter than the depth of the boots, 2) a cigar box, and 3) an inexpensive ladies' hair dryer.

Fasten the ends of the two hoses in two holes cut in the small end of the cigar box. Poke the hair dryer nozzle thru another hole in the opposite end. Insert the two hoses in your wet boots, turn on the dryer & Presto! you'll have dry boots! T76

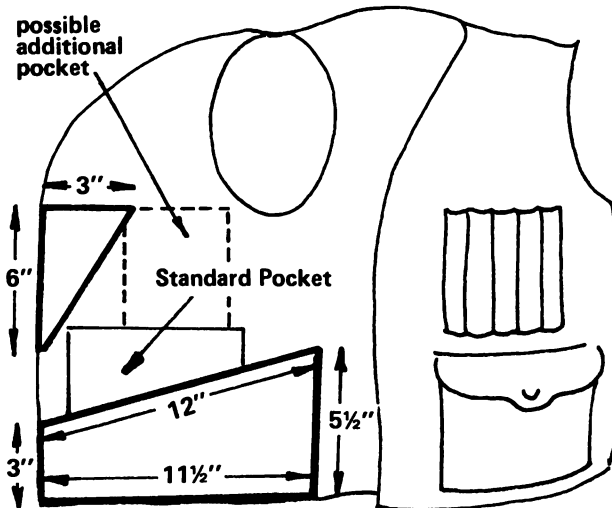


EDWARDS "BOOT TOASTER"

Photograph Pouch

"Finger tip convenience plus secure photo-toting," advertises Bill Wieger of the Boulder Ranger Dist., Payette Forest (R-4), who's perhaps been looking at mother kangaroos.

He's come up with two handy pockets, sized for a plastic photo carrier, riveted to overlap one of the large side pockets of a cruiser coat.



"That upper triangle keeps the carrier in place when you bend over or fall. If you don't have a heavy sewing machine, the rivets alone will serve, also will allow needles, twigs & other debris to sift out.

"Only need one square foot of sturdy material," Bill says. "Make the pockets of the size & shapes shown, and even with the restricted space between arm hole and bottom of the vest there'll be room for insertion & withdrawal of photos.

"And the sacroiliac strains to take out photos from the usual back pouch of the vest are eliminated; that useful carrier's freed for lunch or other tools.

"The standard inside pocket is still available for other items because the new pocket is overlapping, but is not nearly so deep." T57

Cruiser Vest Grommets

"Trouble with your cruiser vest?" asks David Hensley, Service Forester (CFM) at Chickasha, Oklahoma.

"If I button mine I can't reach the inside pockets, & unbuttoned, it rides back on my shoulders if loaded with lunch, paint, etc.

"I put a grommet on each side of the vest about collar-bone high. Tied two snap swivels to each end of a 4 inch leather thong and snapped them into the grommets. This holds the vest in place and allows entry to inside pockets. Also forms a good place to string rolls of flagging to prevent snagging on the brush and fumbling for loose ends.

"I also have two extra grommets on the bottom of my vest for attaching the thongs of my compass & clinometer," David notes. T76

Cruiser Vest Zipper

"Most field foresters wear Filson cruiser's vests in the West and Alaska," say Carl Wilson, Ketchikan District, So. Tongass Forest. "We're sold on the many pockets, pencil holders and large pouch in the back."

"Make your vest even better: Remove the snaps on the back pouch and put in good heavy 11 inch zippers. Cut the sides of the pouch open to the lower edge of the vest and have an opening to slide 9 inch x 9 inch air photos in without bending them." T11

Cruiser Vest Thongs

"String leather thongs through holes in either side of the back of your cruiser's vest," says Louis Willcox, Forester on the Quinault Indian Reservation, B.I.A. at Hoquiam, Washington.

"Handy to tie on your rain-gear on those 'looks like rain' days." T39



THE WIEGER POCKET

Cruiser Vest Pocket Reinforcing

"Reinforce the pockets of your cruiser vest against the wear of sharpcornered tools like abneys, compasses, etc.," says Doral Martin, Darrington Ranger District, Mt. Baker Forest (R-6).

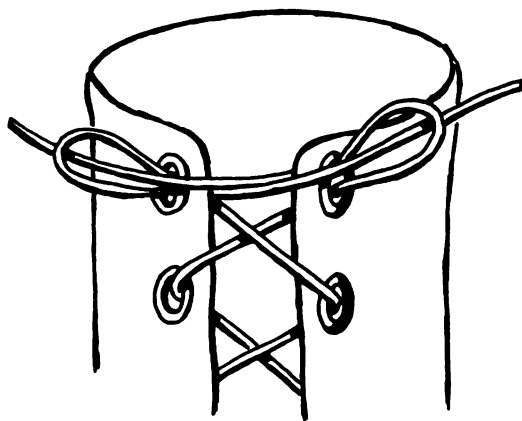
"Turn your pockets inside out and paint the fabric with heavy weight neoprene paint. This strengthens the fabric where the wear's greatest and greatly lengthens the life of your vest." T24

Non-Slip Boot Lacing

"Eliminate the boot-lace 'bow' that snags in the woods," suggests Randall Herbert, Farm Forester for the Missouri Conservation Comm., at Hannibal, Mo.

"Lace boots all the way to the top, run each lace back thru the top eye to form a loop. Take each end and put it thru the opposite loop and pull tight. To loosen, pull on one loose end.

"Better than a square knot, too, because it doesn't slip," says Randall. T41



Retread Soles

"Neoprene shoe soles have much life after they become slick from wear," says Kirt Darner of the Dolores Ranger District, San Juan Forest (R-2).

"Just finish your steaks on your charcoal grill and while the grill is still hot place a boot on the grill. Leave as long as desired for new sole pattern depth. Turn boot in two directions for a cross pattern -- or a diamond pattern," says Kirt.

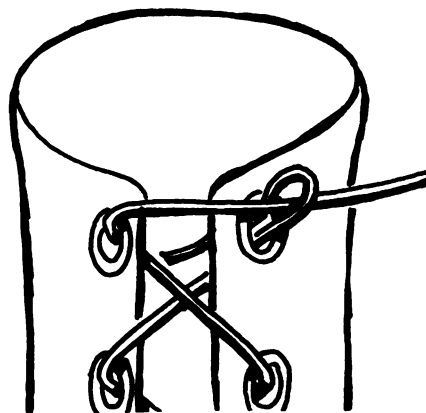
Ed. note: Suppose with the "I've been here" fad we might find folks heating wires to pattern more "personalized" shoe soles, then tramping their initials or brands in the dusty or muddy spots of our trails and shores. Maybe Smokey ought to subsidize a "Careful with Fire" tread for boots! T76

Improved Non-Slip Lacing

"The boot-lace 'bow eliminator' described in previous T.T. can be simplified," alleges 'No'th Woods' Aus Helmers of the No. Forest Expt. Sta. at Juneau.

"Lace to top but run only one lace back to form a loop. Take opposite lace thru this loop and pull tight.

"I started using the double tie more than 25 years ago in my early cautious belt and suspender stage, but in my daring old age have found that even wet slimy leather stays tight with a single tie. The time I could have saved!" says Aus. T46



Boot Repair

"Your favorite boots giving 'way?'" asks Jim Geisler, Dist. Extn. Forester at Kansas State University.

"You can satisfactorily patch abraided toes or cement soles with epoxy cement (the two-tube variety) ... and -- it-won't-let-go! -- just as the manufactuer claims," verifies Jim. T68

Metal Studs

"Here's a safety idea for foresters in the snow country," suggests Mick Mills, Safety Engineer for the St. Regis Paper Co. at Libby, Montana (formerly J. Neils Lumber Co.)

"To add a partial non-skid boot for a better understanding on ice, have regular tire winter metal studs shot into the heels of your rubber boots. Mine work fine.

"Of course you'll have to hold your speed under 40 for the first 100 miles, but most of us won't mind." T60

Paint Storage

"Upside down your marking paint cans when you receive them," says Henry Steitz, of the Texas Forest Service, Henderson, Texas.

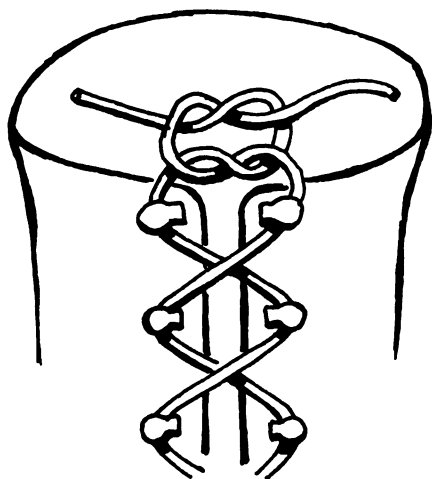
"This prevents excessive settling of the pigment -- which is a lot easier to scrape off the lid than stir from the bottom of the can!" says Henry. T28

Boot Lace Tie

"How about a sturdy boot-lace tie for the forester with hooks to the top?" asks John Woerheide of the Kaskaskia Exper. Forest, Central States Station.

"Leather laces tied with a simple square knot will give you a full day of non-tie walking during wet or dry weather. Knot can be quickly untied, need not be pulled tight to stay tied," says John.

"Trim the excess length so it doesn't snag and trip you in the brush." T48



Paint and Guns

Saved By Safety Pin

"Inside my cruiser's vest I carry three safety pins of various sizes for the purpose of unplugging paint guns. When marking timber or running lines, it saves grumbling and mess, and can make an otherwise gloomy day sunny!", exclaims Paul Pierce of the Menominee State Forest, Mich. Dept. Nat. Resources, Stephenson, Mich. T77

Paint Can Shaker

Jim Lunsford of the French Broad R. Dist., N. Carolina N. Forests:

"Thought everyone knew about shaking marking paint, but anyway here's how we do it:

"We buy our paint in quart cans & also bought a 5-gal. paint shaker. With a little addition of plywood, the shaker will hold half a case of paint. Ten minutes of shaking and we don't have to shake anymore until the half-case is used up. Works fine!"

(Don't some of our Forest Service names have a "tang"? Wonder what the source of that Ranger Dist. name is? T87

Paint Lump Remover

"Your Nelspot Paint mixes easier if you add about a tablespoon of solvent," say Howard Welton of the N. Cheyenne Indian Agency, Lama Deer, Mont. (B.I.A.).

"Store your gun in a can of solvent, with solvent pumped to the tip. Then when starting out in the morning, squirt the gun into the paint to be mixed.

"All lumps, even in 'shelf-worn' paint, will come out smooth as cream," Howard notes. T38

Ball Bearing Paint Mixer

Paint in your marking gun settle and cake? "Keep the pigment mixed with several 1/2 inch ball bearings in your paint can," advises Harry Woffenden, Rexford District of the Kootenai (R-1). "If you can't get big bearings, use 2 or 3 smaller ones." T12

Unclogged Paint Guns

"After years of cussing clogged paint guns and lumpy paint, we came to a reasonable solution to the problem," say Ted Tolman and Cory Price of Upper Lake Ranger Dist., Mendocino Nat'l Forest (R-5).

"We buy paint in quart cans, in small amounts, usually enough for three months. This insures paint that hasn't set around freezing in winter or evaporating in summer. Also, we get a good grade, like Nel Spot. (No transferring a few cents difference for cheap lumpy paint into dollar expenses of wasted field time unplugging marking guns!)

"Quarts can be shaken vigorously by hand just before using, too. With the above precautions we swear we've not had a paint plug-up in months!

"P.S. A little preventive maintenance on the paint guns also helps!" T86

Improved Redy Mapper

"Water film under your Redy Mapper disc hinder your turning it?" inquires Vladimir Kalat of the Glacier Ranger Dist., Mt. Baker Forest, R-6.

"Maybe your model doesn't have the poke-hole slot at the left and the silicone coating on the chart's been worn off. If so, melt a small amount of paraffin, apply a thin layer to the chart. Doesn't even have to be smooth. You'll be able to turn the disc easily even if there is water under it," says Vladimir. T78

Paint Can Tally Holder

"When marking timber with a Nel-spot paint gun, attach a tally card to the paint container with a rubber band and leave the tally holder in the office," says J.O. Boynton, Forest Mgmt. Officer, Canada Dept. of Forestry, Frederickton, N.B.

"Spare cards may be carried under the one in use or in a shirt pocket." T32

Clean Paint Off Pickup

"Accidentally squirt marking paint on your pickup?" inquires "Zeke" Hornick, now T.M. on the Chequamegon (say *that* the first time!) Forest (R-9).

"Most vehicles sooner or later accidentally acquire a certain amount of yellow camouflage and often it's dry before you discover it," Zeke writes.

"We found out that pure 'LesToil' (and I assume his brethren like Mr. Clean, etc.) and pads of very fine steel wool would save both our skins and the pickup's. Apparently the steel wool breaks through the paint surface and allows the LesToil to go to work.

"Be careful with the steel wool and no damage to the (intentionally) painted surface will occur.

"We'd used turpentine, thinner, fine oil, white gas, and swearing without luck before we tried LesToil. I'm sure it cut cleanup time at least $\frac{3}{4}$," says Zeke. T46

Paint Gun Rack

Marking paint cans using your pickup bed as a skating rink (with the usual spills)? Ray Gass, Farm Forester with the Missouri Conservation Comm., Ironton, Mo., suggests a make-it yourself box to insure that all the cans at least slide together. He puts partitions for six vertical cubbyholes inside an 8 inch x 13 inch x 8 inch wood box made from an orange crate; a light metal strap around the middle of the box reinforces it (like a girdle does a gal). Holds 5 1-quart cans and your paintgun. T18

Keeping Paint Gun Clean

Clean your Nel-spot marking gun. "There's nothing more annoying and time consuming than trying to work with a plugged gun," says Bill Cotter of the Eldorado Forest (R-5). He recommends the following method to keep your marking gun in top condition:

"Dissolve a 30 cent size package of Sav-A-Brush in 5 gal. of water. Then when you won't use your gun for awhile, drop it in the solution. When you need it, take it out and turn the garden hose on it. You'll have practically a new gun," says Bill. T9

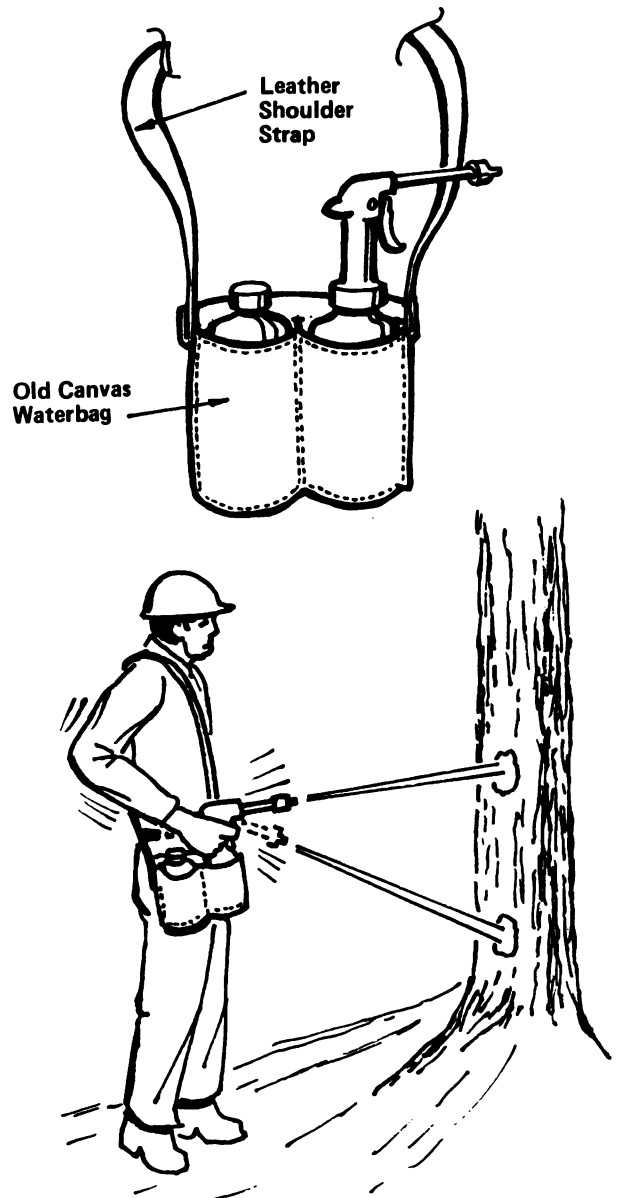
Paint Can Holster

Have (paint) gun, *can* travel! A fast draw artist who would like a little practice will appreciate this tip from Dean Reed, Musselshell Dist., Lewis & Clark Forest, R-1:

"Take an old water bag and cut the top open. Attach a leather strap long enough to allow the top of the bag to drop about belt level. (An adjustable strap if you're ambitious.) The bag will hold two quart-size cans of marking paint.

"This little package helps speed marking because you don't have to pick up or set the paint gun down every time you go to mark a tree, use the diameter tape or have other need for both hands.

"Surprising how accurate a fellow gets when his hip's hep!" T14



Another Holster

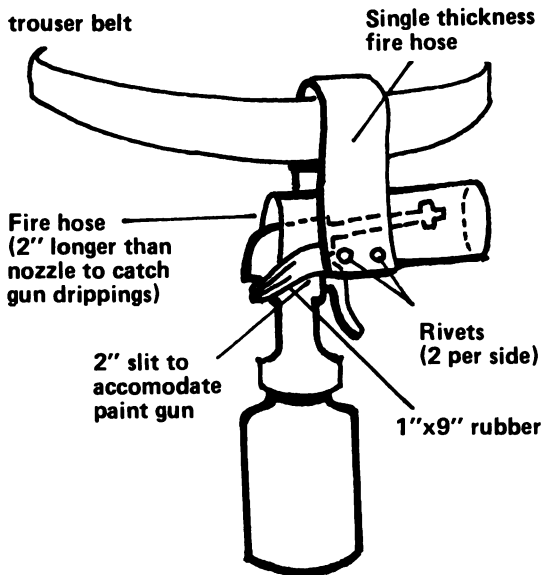
"You almost need a third arm to carry all your marking gear," writes Joe Bachant of the White Mtn. Forest (R-9).

"So I contrived a holster for my Nel Spot paint gun. Made it from two 10 inch pieces of old 1 inch linen fire hose and a 1 inch by 10 inch strip of inner tube, all riveted together as shown below.

"I cut the folded edge of part A for about 2 inches to accommodate the gun barrel and frame. Length should extend beyond the nozzle to catch drippings.

"Part B is a belt loop. Slit both edges of a length of hose, as a single thickness is enough.

"Part C is a 1 inch x 9 inch rubber that goes under the spur on the gun frame to hold the gun in the holster. A tab on the middle is convenient," Joe adds. Rivets -- 2 per side. T72



Tree Marking Paint Cleaner

"Want a 'super cleaner' for removing marking paint splatters," asks Jim Rocca, Dist. Forester for Iowa Cons. Comm. at Independence, Iowa.

"For your face & hands, just rub on a thin film of vaseline petroleum jelly, then wipe off with tissue. No waiting period. No strong odor.

"For glasses, same way -- wipe on, wipe off. One other thing -- it will remove paint from good leather gloves for 'forgetters' like me who don't put on their old ones.

"Real handy to be able to clean up right away after I've marked trees all morning and must talk to landowners in the afternoon," says Jim. T49

Backwoods Pliers

Were you ever marking with a Nel-spot or similar gun, found the tip plugged and screwed too tight to remove with your fingers? Were your handy small pliers in the pick-up long way down the hill?

When this happens to Howard Welton of the Northern Cheyenne Indian Agency, Lame Deer, Montana, he has a simple solution:

He breaks off two strong sticks approximately $\frac{1}{2}$ to $\frac{3}{4}$ inches in diameter and 8 to 12 inches long. With the gun between his knees he places the sticks in parallel position with the tip between, one hand at each end of the sticks, grips the sticks and turns. Easy?

And you can improvise a pair of pliers the same way if you need one hand free: Wrap your shoe lace several times around one end of the two sticks to act as a hinge and use them as pliers.

Might even work (better'n fingernails anyway) when you get a flat and some ----! didn't put the lug wrench back. T19

Paint Frozen Threads

"Keep marking gun threads & paint can caps from 'freezing' when you are not going to be using them for awhile," suggests John Plummer, Farm Forester for the Missouri Dept. of Conservation at Mountain Grove, Mo.

"Grease the threads with waterless soap. This keeps the paint from setting, promotes a good seal, and you can easily unscrew the threads next time you need to," John says. T69

Marking Gun Carrier

Another good idea to prevent your paint gun from messing up your pickup comes from David Greeson, B.I.A., Crow Indian Agency, Montana.

"From your nearest fire-equipment supply house obtain a wall bracket for a $2\frac{1}{2}$ lb. CO2 fire extinguisher. This type of bracket is similar to the clasp type for pyrene (carbon tet) extinguishers (but they are too small). Shorten the bracket to suit, mount in any convenient location. You'll have a clean, convenient carrier for your marking gun." T22

Vest Pocket Dispenser

Carry plastic tape in your Filson-type-canvas-vest pocket; thread the end out the third button hole and let about 5 inches dangle. Tape's ready for use, rolls don't fall apart. Chuck Hill, Marys Peak District of the Siuslaw (R-6) passed this one along. T9

Null And Void Paint

A paint gun "eraser" is suggested by Leonard Nelsen of the Nicolet Forest (R-9).

"Everybody goofs once in a while when marking timber or boundary lines with paint," says Leonard. "Erasing painted lines is a real problem. Sometimes the fellows would try to chop the marks away -- and leave a blaze on the tree and the chance for infection. I suggest we adopt a 'Null & Void Paint' for marking over our mistakes." As a result of Leonard's suggestion, Region 9 has designated black paint for that purpose throughout the Region. It can be carried in a small aerosol container and "black out" your goofs. (*Most of them!*) T26

Flagging Unrolling Problems

Remedies for plastic flag rolls coming undone & messing up their cruisers coats come from fellows far & near. Must be a *real* problem -- but there are lots of good solutions:

"Spray one swipe of insect repellent along the edge of the flagging," say Jim Millard, Herbert Shores & Roy Wilkins of the Cold Sprs. R. Dist., Ouachita Forest (R-8). "It melts the edges, lightly sticks them together."

Bill Powers of the P.S.W. Station at Redding, Calif. cuts an one eighth inch rubber band, passes it thru the hole & ties it over the tape. It rolls as you unreel.

"Push a small tack thru the roll," says W.H. Valentine, Forest Engineer for the Humboldt Forest (R-4). "The head of the tack tears right thru when you pull off a length."

"Just touch the hot coal of a cigarette to the roll end & it will stay in place," says Quentin Mack of the Holly Sprs. Unit, Miss. N.F.'s (R-8). "Or strike a match, blow it out & touch to the tape."

Previous "Tips" have included running the tip of a soldering iron over the edge, painting the edges with rubber cement, & running a lighted match on the edge. Now if you can't take care of this problem with all of these helpful suggestions, you just *like* messy pockets! T66

Button Hole Dispenser

"Fall rains make it tough to unwind your plastic flagging from your buttoned-up cruiser vest?" asks Dick Zechentmayer of the Mill City R. Dist., Willamette Forest (R-6).

"My wife sewed a large buttonhole in the cruiser vest above the pocket where I pack the flagging.

"Now I merely pull out the right amount and string it up. Sure convenient," Dick says. T52

Fly Caddy Dispenser

"For a plastic-flagging tape-dispenser I use a large 'South Bend' dry fly caddy that snaps on a belt loop or vest-pocket button hole," writes Vaughn Mattson, McKenzie R. Dist., Custer National Forest (R-1).

"Remove the partitions except for enough to form a hub. Then with a fine saw cut a slot in the side for the flagging to pull thru. Drop in the roll of flagging and replace the lid, fastening it with a screw-type binder post with a 1/4 inch washer between top and bottom," says Vaughn. T79

Color Coded Flagging

"Plastic flagging is so handy and yet so durable we've had trouble from too many flags in the woods," notes Doug Leisz of the Lower Trinity District, Six Rivers Forest, (R-5).

"We now have a flag and paint color-code that nobody on the district varies. Changes in personnel don't bother, everyone knows what the colors mean.

Orange is for permanent roads; red for temporary roads. Helps the engineers, operators, everyone."

"We use yellow for preliminary sales work only; blue for cut lines -- both in flagging and paint. (The operators know this too.) T22

Plastic Flag Prolonger

"Want a plastic-flagged line to last at least 3 to 4 years?" asks Bill Lambert of the Tahoe N.F. (R-5).

"Then don't tie to limbs or twigs or below the snow line. Tape gets brittle and whips off in the wind. Snow fades some tapes, pulls them down, may cause quick deterioration.

"So for a semi-permanent line, completely encircle trees 3 inches to 8 inches D.B.H., above the snow-line.

"If you wear a narrow belt, you can handily carry one or more rolls of tape on it without the tape unrolling," advises Bill. T58

Twine Knife

"Tying and cutting twine a great deal?" asks Stuart Slayton of the Ottawa Forest (R-9). "While baling trees in nurseries, in tying up bags of cones, in tying plastic garbage bags around campgrounds, the old pocket knife is a pretty slow tool.

"You can get a 'Timberbeast's Ring' -- officially called a 'Handy Twine Knife'. It's worn like a ring on the finger and saves lots of time, is instantly available. Twine knives come in sizes to fit any fingers -- or thumbs, no matter how hairy," says Stuart. T69

Marking Pencil Identification

"We use china-marking pencils to identify our plastic flags and they're not so messy as felt-tip markers," says Bob Toney, Sitka Ranger District of the North Tongass Forest (R-10). "Our fellows usually have grease pencils for marking aerial photos anyway - so we don't need more equipment." T25

Two Flagging Colors

"Combine a couple of jobs when laying out water bars," suggests Bob Kenney, Pagosa Ranger Dist., San Juan Forest (R-2).

"Carry two colors of flagging. I use red for the water bars and yellow to flag overlooked logs. Saves the logger time looking for the logs; saves me time not having to show them to him!" T72

Tools

Tree Measurement Book Covers

Protect your tree measurement books and keep them clean by a cover of light weight plastic (like women use for curtains) stapled to the cover. Ross Teuber of the Apache in R-3 says one cover will last for several books. T3

Pen-Lite Hand Lens

"Much easier to examine bark and twigs in shade with a pen-lite 10-x hand lens," says Bob Norris of the Delta Branch (So. Sta.) T3

Abney Level Lens Cleaner

Pipe cleaners also make a good Abney lens cleaner if your baby's "Q-Tips" are at home (previous T.T.). "If you smoke a pipe you can also use the same cleaner for it (afterwards)," advises "Multiple Use Tom" Schmeckpeper of the Deschutes (R-6). T7

V-Belt Ladder Stabilizer

"Use a V-belt at the top of your tree-climbing ladder," advises L.H. "Red" Nelson, Labor Leader of the Eagle River District, Nicolet Forest (R-9).

"It snubs better, can support more weight, and is flexible so it doesn't get in the way and need not be removed," Red says. T52

Stable Tree Ladder

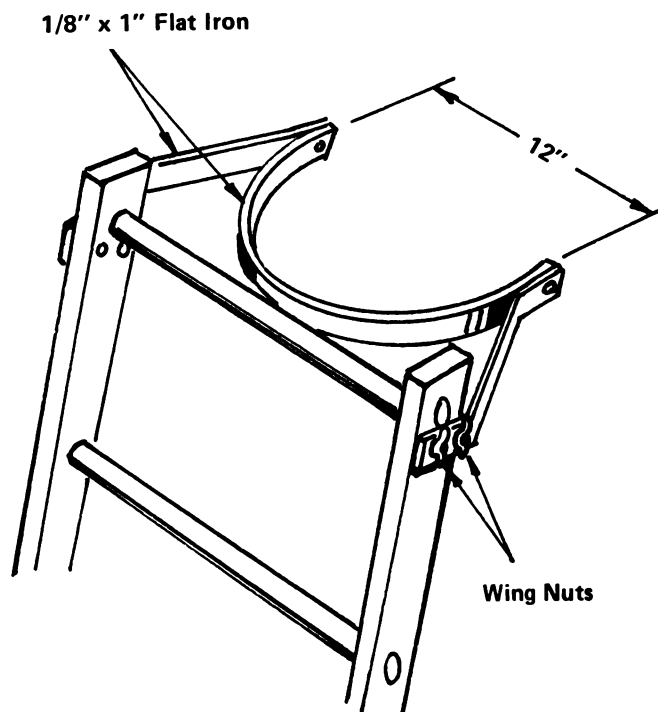
"We need to measure DOB and bark thickness at 17.3 ft. on superior trees," notes John Schulte, Jr. of the Evangeline Ranger Dist., Kisatchie Forest (R-8).

"Pretty hazardous teetering on a ladder where the top rung forms a tangent to the tree.

"So we rigged a semi-circular attachment for the top of the ladder (shown below.) Eliminates all teeter-motion when the bole is larger than the semi-circle, most when the bole is smaller.

"Fabricate from one eighth inch by one inch flat iron; remove frame, using wingnuts, when ladder is used on flat surfaces," says John.

(Ed. note: For additional stability on large trees, either the semi-circle or the side braces might be extended an inch and slightly sharpened.) T50



Oil Can Covers

"Plastic lids from pound coffee cans fit quart oil cans perfectly," simultaneously note Ted Mokry, Farm Forester for the Missouri Cons. Comm. at Monett, Mo., and Gerald Magoosh, Mescalero Apache Fire Dispatcher of the Mescalero Ind. Agency, B.I.A. at Mescalero, N.M.

(Just another instance of two fellows getting the same good idea.)

They suggest the caps keep partially used saw-oil containers from spilling, from gathering dirt, and from messing up your paint gun box and pickup bed. Some fellows pump a few squirts of oil thru their marking guns at night to prevent clogging and keep them limber, they note. T52

Repairing Loose Axe Head

"Loose head on your axe or Pulaski?" asks Ralph Johnson of the Dolores Ranger District, San Juan Forest (R-2).

"Pull the wedge, remove the handle and saw off about $\frac{3}{4}$ inch. Taper the sides for about $\frac{1}{2}$ the rest of the contact distance of the axe head.

"Reinsert the handle snugly in the head, align it, mount vertically in a vice. Fill to the top of the axe head with liquid epoxy fiberglass resin, used for patching boats. Let it set.

"Haven't had a bit of loose-head trouble since," avers Ralph. T82

Diameter Tape Extension

"S-T-R-E-T-C-H your arm with a D-tape extension," suggests Ed Day of the Routt Forest (R-2).

"Speeds up taping down trees, large standing ones, limby and forked trees, slips easily under down logs too," says Ed.

Made of three fourths inch steel banding scrap, 2-3 feet long, tapered to a three eighths inch tongue on one end. Riveted (with a repair kit riveter) to a D-tape in place of the hook. Other end is rounded so it will slide under down logs without catching.

In snake country you might find it handy for measuring down trees and keeping your fingers un-bit. T19

Improved Measuring Tape

"Your measuring tapes break quite often near the spike?" asks Ed Bryant of the Ouachita N. Forest (R-8).

"That's because it frequently crimps near the spike, and will subsequently break at the crimp. The spike binds in the trees and causes the crimp, of course.

"If you'll attach a heavy duty trot-line fishing swivel between the tape loop and the spike, no crimps will develop and your tape will last longer," asserts Ed.

Installation:

- a) Remove loop on end of tape by spreading, then insert loop through swivel, squeeze loop back on tape.
- b) Cut slot on front of spike base.
- c) Drill hole in top of spike base if necessary. Insert snap-on swivel thru top of spike base and out the slot. T80

First-Aid For Broken Tape

Ever break a tape and struggle thru the day until you reached your repair kit? Then you'll appreciate Gene Tomlin (Craig Dist., So. Tongass Forest, R-10) suggesting you add 2 or 3 tape mending sleeves and a 1 inch square of emery cloth to your first aid kit. T15

Tool Belt Sheath

"Need an inexpensive belt sheath for a file, scribing tool, chainsaw wrench or similar items?" asks Dean Geesaman of the Kettle Falls R. Dist., Colville Forest (R-1).

"You can make one in about 3 min. from a 16 inch length of discarded 1-inch linen fire hose.

"Fold three inches at one end over and rivet together as a belt loop. Cut a slit crosswise to fit the tool, rivet or staple the bottom shut if desired. Main cost is 2-3 tubular rivets." T88

One-Person Measuring Tape

"Tired of rolling up your tape on long one-person measuring jobs?" asks Bob Pfister from the Intermountain Station's Satellite at Spokane.

"Use a one-hundred foot length of Cloth tape, detached from the reel. With plastic ribbon, tie the end of the tape to a convenient branch or stick inserted in the ground. To measure, merely pull on the tape to break the ribbon on the far end.

"Trail the tape through your hand as you scramble through the brush and tie with ribbon again when the tape is tight. Tape rarely gets caught on the brush and measuring is rapid," says Bob. T36

Portable Canvas Table

A portable table top for canoe trips or pack trips where space and weight are at a premium is described by Prof. Ed Wyman of the U. of Connecticut at Storrs. He saw one on a pack trip into the Alberta Rockies.

"Sew two sheets of tent canvas (the size of the desired table top) together along one long edge and the two short edges. Then stitch parallel pockets between the short edges and insert light wooden lathes in them. Sew up the other (long) side.

"Completed table top can be rolled into a tight bundle a few inches in diameter and as long as the table width. To set up, you'll only need a pair of poles on which to roll it out," says Ed.

(Ed. note: Suggest a silicone spray could help keep the surfaces clean and washable. Or if the final edge isn't sewn, the lathes could be removed & the canvas laundered. Or one side could be plastic, for cleaning & less weight, the other canvas for strength.) T70

Stapling Hammer Holster

"A handy holster for a stapling hammer is an 8 inch length of old 1½ inch cotton jacket, rubber-lined, fire-fighting hose with slots cut to fit the hammer; pack it on your belt when not in use. *And* to keep plastic flagging from unrolling and getting unruly in the brush -- "slam it" a couple of times with a stapling gun," advises Don Hollingshead of the Washington State Dept. of Natural Resources. (Welcome, Don. Your "gang" has lots of good ideas we'd like to pass around.) T16

Increment Borer Cleaner

Increment borers must be cleaned in humid climates after each day's use; they will rust overnight if not cleaned and oiled. Keep the inside of your borer free of rust with steel wool and oil!

Wrap a small quantity of steel wool around the extractor, just enough to push in the opening of the borer. Then put a few drops of oil on the steel wool wrapped around the extractor, and push in and out of the borer several times. This will clean all the rust from the borer, and also oil it. The steel wool may then be used to clean the extractor and handle, advises L.D. Bordeaux of the Delta Research Center, SS. T16

Increment Borer Oiler

To oil your borer, Bob Howden (TM-R-5) suggests you soak a little cotton ball in oil from your pickup's dip stick. Push it into the handle of your increment borer to oil the cutting edge. "Oil the borer with the dip stick frequently," says Bob. T16

Floor Wax Borer Cleaner

"Keep your increment borer clean with liquid floorwax," suggests Bill Lloyd, S.C.S. Woodland Conservationist in Milwaukee. Our old friend Ted Plair (S.C.S., Wash.) passed these suggestions along.

Seems Bill's increment borer would turn black and rust from the tannin of hardwood trees. "3-in-1 Oil" helped prevent rusting but cores were unreadable from stain.

"In a small country store the only thing we could buy was a can of Aerowax. We cleaned the extractor and bit with tissue and the wax, coated both parts with wax.

"To our amazement the cores came out clean and bright. If we needed to wet the core to make it readable there was no disagreeable taste like that of 3-in-1 Oil.

"At day's end we dipped the extractor, then the bit in the wax, holding a finger over the handle end of the bit to retain some wax in the tube. This prevented rusting and kept the instrument bright and clean," says Bill. T34

Avoid Increment Borer Loss

Avoid losing or mislaying increment borer extractors or other small tools in the woods: "Paint them with bands of high visibility orange or yellow enamel," advises Ken Smith of the Modoc Forest (R-5). T40

Vinyl Taped Increment Borer

"My plain steel-handled increment borer used to rust badly in the damp summer weather," notes George Peery, Forester for the Virginia Division of Forestry. "I'd have to clean and oil it twice a week.

"Then I cleaned it thoroughly and wrapped the handle in bright-colored Scotch vinyl tape. Handle doesn't rust, is easy to see, and not so cold to handle in the winter." T33

Core Stuck In Borer

When increment cores are stuck in your borer, try baking them out. "Put the tube in a warm oven for awhile. The heat dries the cores and they'll come out easily," advises Harold Berg of the Malheur Forest (R-6). T9

Increment Core Quivers

"Make a quiver for your increment cores," suggests Duane Green, Deputy State Forester of the N. Dakota Forest Service. Cores are easy to break, hard to carry as most of us know. Hard to identify too. Some fellows use corrugated paper but the cores are hard to get out.

Duane says his method isn't original but works this away:

1. Tear off sheets of aluminum foil a bit longer than the cores you will take.
2. Roll neat, round tubes of foil around a three sixteenths inch dowel rod or tubing, or even a chaining pin.
3. Carry the little rolls in a quiver -- a short section of map tube hung with a cord from your shoulder and with a screw cap.

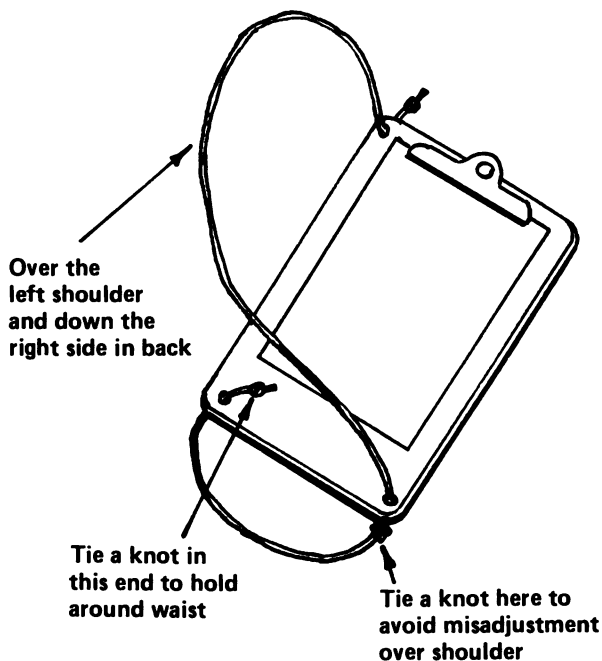
4. Slide a core in a tube, press the ends shut and emboss the identification data on the flat aluminum ends.

"Store the cores in a refrigerator to prevent mold," Duane advises.

(Ed., note: Big soda-straws might make pretty good tubes too. And welcome, Duane. Come often.) T19

A Third Hand

Haven't you wanted three hands (and sometimes two heads) to use all the gear you need in marking timber? Joe Bruggenschmidt, Clark State Forest, Indiana Dept. of Conservation, Henryville, Indiana says he has gained another hand by drilling small holes in the three corners of his clipboard and stringing it up with a leather shoe lace as shown in the drawing.



The string at the top of the board can be drawn up to hold the board close to the body when crawling through brush. He says he's tried several methods of "stringing" it up, but found this method best if you are right-handed. T16

Field Scratch Pad

Tape a piece of frosted acetate, rough side out, over some blank charts, tables, etc. on your tatum for scribbling figures.

A temporary record of distances, readings on tree heights, diameters and distances on angle-gage count trees can be kept here instead of in your head. When the calculations are complete, erase with art-gum eraser and you're ready for the next.

If the acetate surface becomes smooth, roughen it with fine sandpaper, used twice at right angles.

The acetate's also a good cover for ready reference to cruising tables. T64

Mouse Trap Tatum

"Mouse-trap your tickets at scaling stations," say Al Breitenstein and Al Lindsey, scalers on the Yaak Ranger District, Kootenai Forest (R-1).

"Unless you plan multiple use with your mousetraps, take off the trigger and bait pan and identify the trap with the sale designation. You can mount the ticket holder directly above the scalebook for the particular sale, and can always see the last ticket."

(Ed. note: Traps might be handy for holding maps, papers, etc. in your pickup cab or pickup box; with a scrap of plywood you'd have a simple tatum holder. Probably we'll find lots of uses other than for mouse heads if we keep the idea in mind.) T27

Handy Tatum Tables

"Front & back sides of your 6 inch by 9 inch aluminum sheet-holder are handy places for cruise tables & other information," jointly declare Dick Ferneau, George Landrum & John Wells of the Hume Lake Ranger District, Sequoia Forest, R-5.

"Attach the abbreviated information (on cards) to both sides of the holder, cover & seal with a self-adhesive transparent plastic covering.

"Provides for easier access to needed information when cruising, neater & easier handling of cruise books." T63

Warm Tatum

"Avoid cold hands when scaling or cruising with a metal tatum or card holder," says Bruce Rynearson of the La Grande R.D., Wallowa-Whitman Forest (R-6).

"Glue indoor-outdoor carpet on the metal. It's thin enough (one-eighth of an inch) for easy handling and makes your work more comfortable!" T80

Clip Board Hinge Marks

"Your aluminum clip board hinge leave black marks on your maps, papers, etc.?" queries John Woerheide of the Pecos R. Dist., Santa Fe Forest (R-3).

"Cut an one-eighth inch thick shim of wood slightly wider than the space under the cover clamp and the length equal to the width of the clip board and put your papers under that.

"Or cut a plastic, metal or wood ruler to that length and use it," John suggests. T76

Color Coded Keys

"Time wasted searching for the right key from several similar keys on your key ring?" asks Earl Hellie, Kettle Falls Ranger Dist., Colville Forest (R-1).

"I color code the top half of the most-used keys on my numerous key rings with bright nail polish. No more fumbling or searching or trying several similar keys!" says Earl.

(Ed. note: And for finding the right key at night, "notch code" the keys with a small triangular file. Up to four notches on the head of a key can readily be identified by your fingernail.) T86

Relaskop Damage Prevention

"Relaskops are easily damaged or broken when the drums accidentally release in your pocket," according to Darcey Goard, Forest Check Scaler at Isabella Ranger Dist., Superior Forest (R-9).

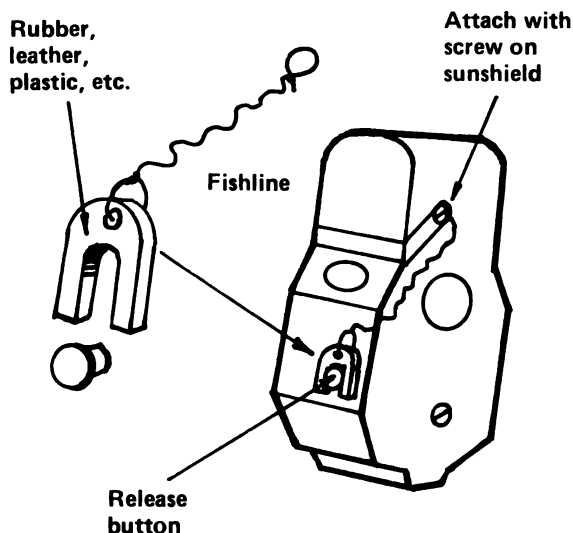
"This can easily happen when not in the case -- or even when in it.

"But you can easily modify the instrument to prevent damage -- in either of two ways:

a) "Cut a piece of soft rubber to fit the space between the drum release button and the body of the instrument. You'll then need to press extra hard to release the drum.

b) "Cut a horseshoe piece of rubber, leather, plastic, etc. to fit the space around the stem of the release button. Remove when using the instrument. Tie with a short fish line to the sun shield screw."

Rudy Hedlund, Don Burge and John Kernick, Timberbeasts all, say "Hooray" to Darcey's idea. They've seen a lot of expense and delay involved in getting damaged & inaccurate Relaskops repaired. T67



Fogged Up Relaskop

"Our Spiegel Relaskops fog-up in wet, cool weather," complains William R. Taylor, D.R. Umpqua F.F. We have not had any experience with this problem on Relaskops. Can any of our readers help?

Remember William Taylor's problem with Relaskops fogging in cool wet weather. Several of our readers pitched in: Peter K. Selvig, Mt. Baker National Forests suggests "Lens Luster". Costs about \$1 for a aerosol can at your drug store. Donald P. Footer reports that while he was in the service they experienced a similar problem with submarine periscope lenses. The fix was a salve-like substance wiped directly on the lens. The Navy Department, Bureau of Ships should be able to provide information on source of supply. James W. Craig of Forestry Suppliers, Inc., suggests covering the Relaskop with a transparent plastic bag to keep the rain off and to avoid carrying the Relaskop under jackets or rain clothes where the temperature change will cause fogging. From frequently chilly Wisconsin comes the suggestion by R.W. Cook, Forester D.M.R. to wash the lenses with clear detergent, which prevents fogging of regular eye-glasses.

William's problem brings to mind experiences I've had with Relaskops. Did you ever notice the high mortality rate of the little round windows of frosted glass? Transparent tape on the inside and outside will prevent their shattering and falling out or, worse yet, in. A better fix would be to replace the glass with acrylic. You can get sheet acrylic in a variety of colors at the better hardware suppliers.

Not everyone has a spare Relaskop, so when one breaks down efficiency suffers. Your local jeweler may be able to repair the Relaskop faster than shipping it away for repair. Regardless who repairs it, check it by shooting a few known heights and checking the BAF. Record any systematic error on the Relaskop body with a vibrating pencil and don't forget the U.S.F.S. brand. T91

Cleaning Relaskop Eyepiece

"Hard to clean a Relaskop eyepiece," notes Darcey Goard, Forest Check Scaler of the Superior Forest (R-9). "It's recessed in a very small hole."

"Lightly twist your pencil eraser in the hole and you'll have a lens free of dirt or lint."

Ed. note: Emphasize that "lightly" -- and first blow off all the dirt possible to avoid scratching the glass. T82

Recoiling Prism

Attention prism cruisers -- "Do you use a piece of string or monofilament tied to your prism, which in turn is tied to your shirt or cruising vest while cruising?" asks Henry Romero, Forester, B.I.A. at Hoquiam, Washington.

If you do, here is something better for only a few bucks. Go out and buy yourself a retractable key holding chain, then --

1. Remove key ring and square swivel.
2. Attach No. 5 fish hook swivel snap to small nail.
3. Attach small piece of monofilament or string (about 2 inches long) to prism or prisms so as to attach fish hook swivel snap.

4. Hook all of this to a nylon cord around your neck. T86

Coin Purse For Prism

"Always breaking or losing wedge prisms because you like to carry them unattached?" asks Jack Basinger, Farm Forester of the Ohio Division of Forestry at Celina, Ohio.

"Try carrying the prism in one of those pliable plastic coin purses that you open by squeezing. Carried in the pocket loose or even setting on the shelf, the lens is easier to find and less apt to break when surrounded by the plastic." T34

Amber Colored Prism

"An amber colored wedge prism makes trees stand out even in cloudy and dark days in dense timber and undergrowth," claims Norm Wortman, Squaw Creek Ranger Station, Gallatin Forest (R-1).

"Reading is much easier, faster and more accurate. You can save time because you can eliminate many trees without actual measurement," says Norm.

Norm covers his clear prism with amber colored plastic. (Could you get the same results with amber-colored sunglasses?) T43

Amber Colored Cruising Glasses

"Like amber-colored cruising prisms for their definition but not their cost?" asks Barton Snyder of the Okanagan Forest (R-6).

"Then wear amber-colored, wrap around safety goggles and use the cheaper clear prisms -- get safety protection free!" T26

Glasses To Spot Bugs

A jaundiced eye for bugs? "Well, in a way, and for some kinds," Harold Woodruff of the Shawnee Forest (R-9) might say.

Harold claims, logically, that reinforcing the orange-red color of dead or dying needles on bark-beetle attacked trees, for example, will make them faster and easier to spot. Especially on dull or foggy days.

So he advocates use of amber-colored (polaroid) shooting glasses when looking for such trees, from ground to air. T63

Tally Wackers On Swivels

"When I switched from Fire Control to Timber, I ran into a problem on my very first cruise & marking trip," notes "Dusty" Rhodes of the Coffee Creek Ranger Dist., Shasta Trinity Forest (R-5).

"I had six tally wackers and *no* place to carry them. I finished the day with tally wackers in pockets, fastened on me with safety pins, & even my Forest Service badge! This, I said, just can't be ... there's surely another way!

"There is! I bought six small swivel snap hooks, evenly spaced three on each side of my cruiser vest, about 1 inch from the snaps, and sewed them on with heavy thread.

"Next day I got a few horse laughs, but at the end of the day I was doing the laughing.

"Trouble with the rings on the tally wackers? Remove the split ring and with a small brazing rod form a solid circle. Will prevent losing the tally wacker.

"Screws come out of the tally wacker? Fasten them in with epoxy glue," Dusty advises. T73

Bunion Pads For Binoculars

"Bunion pads for binoculars," suggests George Jackson (our expert log grader, cruiser, and scaler stationed in Portland, Ore.).

"It's this way," explains George: "Fellows with eyeglasses often need binoculars for log grading standing trees. The binocular eyepieces scratch your eyeglasses.

"So fasten felt bunion pads to the eyepiece of the binoculars and forget about scratches," George advises. "I tried to buy prepared protectors, but could find none. Then my wife suggested bunion pads, and a trial convinced me!" T58

Plastic Bag Over Padlock

"Your gate padlocks freeze in winter?" asks Lacy Johnson of the Wayne-Hoosier Forest (R-9).

"Winter often left me memories of frozen padlocks and numbed fingers until I started placing plastic sandwich bags over the padlocks and securing them with rubber bands. This keeps the moisture out and you can check the locks thru the plastic to see they are closed.

"You can also close a bag with a small twist of wire," Lacy notes. T82

Anti-Freeze Your Padlocks

"Plastic sandwich bags over padlocks to keep them from freezing (suggested by Lacy Johnson of R-9) is one way of doing the job," notes W. John Padden of the Dixie Forest (R-4).

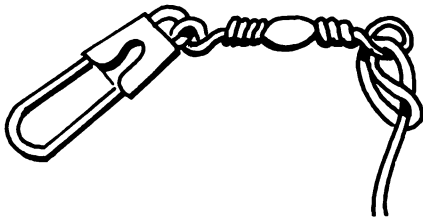
"But try a squirt of ethylene-glycol-base antifreeze in the lock occasionally. Might look like colored frost on the lock sometimes, but the lock will work no matter how cold.

"Works on pickup doors too," says John. T83

Tie Down Pocket Equipment

"Don't lose your pocket field equipment, yet keep it handy," advises Beverly Driver, (Timber Inventory, R-7).

"Tie down your Abney, angle gauge, compass, etc., with a thong fastened at each end to a fishing snap-swivel. Snap one end in a buttonhole or pocket flap, the other to the equipment. Tuck the thong in the same pocket. (This fishing gadget should make it unnecessary to explain about the "one that got away").



"Another good rig is to put a button or snap on each of the long pockets inside the front of the vest. Put the button on the vest, the button hole on the pocket. Set the button far enough back so you can slide a 5 inch by 9 inch tatum holder in front. The tatum won't fall out with the pocket buttoned.

"For you hunters, loops of elastic tape sewed inside the vest on the reverse side of the pencil pockets let you carry and get to 7 rifle cartridges easily." T10

Make A Jake Staff

"Make a Jake staff," says Barrie Freeman of the Stanislaus Nat'l Forest (R-5).

"Tired of buying Jacob staffs that are hard to push into hard and rocky soil? Do as our predecessors did -- make them. The best are from old hoes or korticks:

- a) Cut off the blade where it meets the steel shank.
- b) Straighten remaining shank and sharpen.
- c) Cut off wooden handle to height desired.
- d) Trim this end to fit compass socket."

"Barrie's idea really works," notes Barney Sweatt (T.M. Staff oldtimer). "And another point is that it may be easier to make a Jake staff from a hoe than to go the requisition route and wait weeks for delivery!" T81

Waterproof Plastic Storage

"Clear plastic hunting & fishing license cases for W. Va. serve our timber markers year round for log grade spec sheets, defect deduction tables, etc." So says Bob Slagle of the Cheat Ranger Dist., Monongahela Forest (R-9).

"The durable, waterproof plastic cases measure 3½ inches by 4½ inches and come complete with pin for attaching to cruiser vest. They keep information at finger tips, save digging thru pockets or scale books," Bob says.

"And the case is the right size for Xerox copies of tables from the R-9 TM Field Book." T62

Keep Cloth Dry

"Here's another of those plastic bag tricks," offers Bill Howard, Biologist of the Florida Board of Health, Entomological Research Center, Vero Beach, Florida.

"When you get in wet woods or in a swamp it's hard to find anything dry to wipe your compass, glasses, etc. because *you* are also soaked. But carry a handkerchief or cloth in a plastic bag in your pocket and you'll avoid this problem," Bill says. T70

Claw Hammer Girdler

Claw hammer girdles Red Alder Weed trees. County Extension Agent John Sargent of Skagit County, Washington demonstrated fast, clean girdling of weed trees with the straight claws of a claw hammer. Joe Buhaly at the W. Wash. Expt. Sta. at Puyallup (try to pronounce it!) notes that in the spring when the bark's loose you merely dig the claws into the bark and pull. A few digs does for the weed tree -- better'n a bear on a seed tree! T28

Planting Hoe Grip

“Feel like one of those ‘take the train’ billboard ads after hitting rocks and roots with your planting bar?” asks Joe Andreski of the Ottawa Forest (R-9).

“Buy a bicycle handle-bar grip at any hardware store and slip it over your planting bar handle. Provides a better grip and takes some of the j-j-j-jar away,” sez-z-z-z- Joe. T39

Smooth Tool Handles

“Prevent rough spots on your emergency tool handles by locating tool mounting brackets so they’ll hold the handles where *you* don’t have to,” says Howard Thomason, Soleduck Ranger Dist., Olympic N.F. (R-6)

“You could also wrap the bracket spot with friction tape to keep a smooth handle. No use *filing* your blisters,” says Howard. T48

Save Your Pencil

“Ever lose your pencil when you bend over as you go through the brush?” asks Burt Holt, Cherokee Indian Agency (B.I.A.) at Cherokee, N. Carolina.

“Wrap a rubber band near the end to keep it from sliding out of your pocket. Also, keep a couple of pencil stubs in a pocket of your cruiser vest. Amazing how often you’ll use one.” T19

Wear Your District Map

“Carry a district map inside your hard hat liner,” says Ted Hatzimanolis, D.R. of the Redwood Dist., Six Rivers Forest (R-5). “We all do.”

“Available immediately and always.

“And no one in the ‘big’ timber is ever without his hard hat! We check on that every safety meeting,” Ted says. T67

Post Your Lube Job

“Do you forget to have your vehicle lubed?” asks Rex Baker, Mapleton District, Siuslaw Forest (R-6).

Mark the mileage figure for the *next* lube job on the glass-front of the speedometer with China-marking pencil. Don’t forget to change the mileage when you do have the lube.” T20

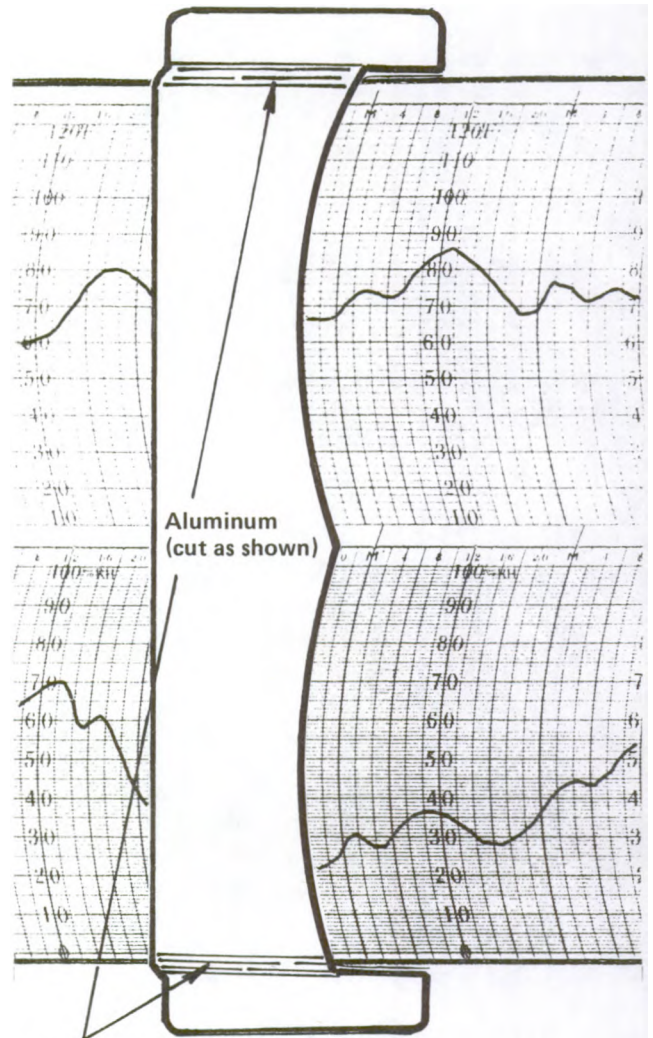
Carry Gas-Line Anti-Freeze

A can of gasoline antifreeze is good insurance to have in your pickup glove compartment. I learned this the hard way when a frozen gasoline stranded me miles from help in sub-zero cold. When help arrived the mechanic added a can of gasoline antifreeze, waited a few minutes and started the car. T91

Temperature Reading Aid

“A simple gadget doubled my speed in reading time and temperatures from hygrothermograph charts,” notes Nellie Beethamat at the Stanislaus Experimental Forest, Pinecrest California.

Nellie’s gadget is cut from aluminum shaped as below and guides your eye to accurate readings. T33



Edge bent back for guide

Soil Sampling Device

"An inexpensive soil sampler is probably in your local garden shop," says John Woerheide, formerly of the Old Central State Sta. & now of the Santa Fe Forest (R-3), Pecos Ranger District.

"Soil augers & sampling devices are generally expensive," John notes. "But a Root Feeder Tube, used for punching holes around trees for either fertilizer or water, is a satisfactory and economical substitute, easily replaced if it wears out.

"It consists of a straight tube about 3 feet long and an inch in diameter with a side step for pushing into the ground." T69

Loose Staples

"Using staple guns for line marking?" asks Blake Ballard, Glacier View Ranger Dist., Flathead Forest (R-1).

"Then your extra strips of staples have probably degenerated into hundreds of pieces in your cruiser pocket when you finally use them!

"Get a pocket-size Velvet brand tobacco can (it's exactly the right size) and some ¼ inch paper base tape.

"Wrap each strip of staples with a 9½ inch length of tape.

"Each can will hold 10 strips of staples; pull them out with the paper tabs on the ends of the strip.

"Hold the lid of the can in place with a rubber band. You can tape a carton of staples in the office in less time than sorting out a single load of broken strips in the field," says Blake. T59

Nail Substitute

Out of nails when marking boundary? Make an axe cut upward into bark above and one downward, slightly less than the width of the boundary tag, below. Slip the tag under the cuts on the tree which hold it firmly.

"Soon the top and bottom edges of the tag grow over and grip it permanently," suggests S.L. Houston of the Mississippi Forests (R-8). T6

Aluminum Nails

"Aluminum nails for boundary and other signs don't 'zing' the saw teeth nearly so much as steel nails do," observes Danny On, T.M. R-1. Lighter to carry, rustproof too. T50

Scribing Tool

"Make a simple scribing tool for 'K' tags from a hard-tempered carriage bolt," suggests Greg Greger of the Greenville R. Dist., Plumas Forest (R-5).

"A 4 inch pencil-size, round-headed carriage bolt with about 1 - 1½ inches of threads works best. Grind thread end to a needle point (don't ruin the temper!), leaving enough threads so your fingers can grip the end strongly.

"A pencil clip slips on to complete a scribe that will make scribing much easier and more legible," asserts Greg. T81

Vibro-Tool Kit

To mark tools and equipment with address or other identifying mark, try a Vibro-tool Kit. Such a tool should last indefinitely and pay for itself many times over. It can also be used for writing on metal to make special labels, tags, etc. Ken Smith of the Modoc Forest (R-5), reports good success with one. T17

Aluminum Signs

"Use a ball-point pen for embossing thin aluminum into signs," says Bob Abbott (Umatilla, R-6). We use thin building-insulation aluminum for semi-permanent signs in the field. Put a piece of thin cardboard between the aluminum and a solid base to get good signs." T9

Aluminum Tags For Stump Counts

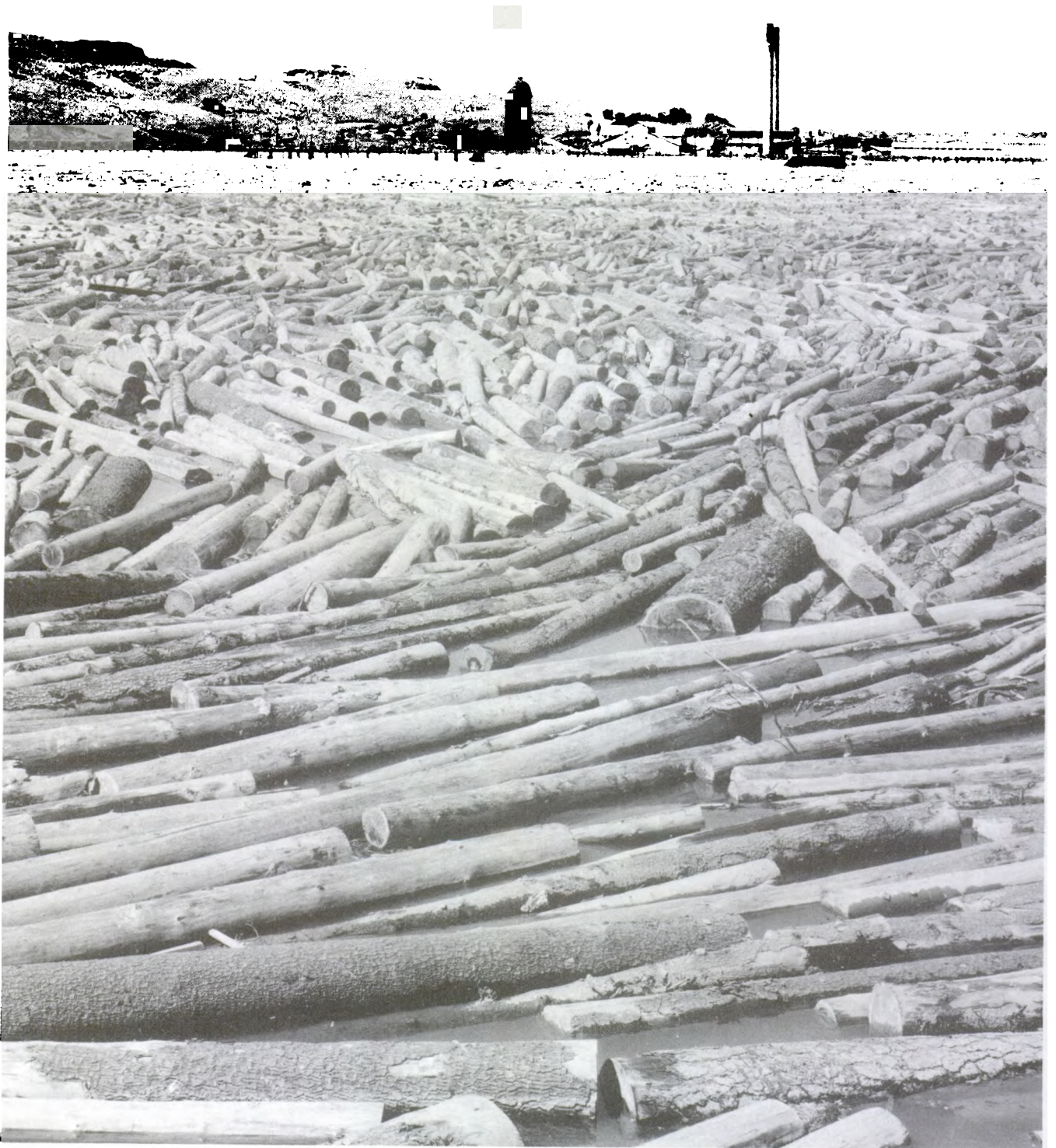
"When measuring and tallying stumps in trespass cases, staple a numbered aluminum tag to each stump. Then record each stump number with its measurements," says Elmer A. Heisel, Forester, Hoops Field Office, Sacramento Area.

"This system greatly simplifies checking in case of disagreement. Also, when you check stumps in an area where brush or grass obliterates the stumps, tie a small piece of brightly colored plastic flagging on a stump splinter or on a nearby bush to help you keep a straight line. The flagging can be seen from several yards and will save time and insure thorough coverage of the trespassed area." T32

Fluorescent Field Equipment

"Yes -- you can fluorescent-paint your easily-lost field equipment," notes Dick Arsenaault of the Maine Forest Service, Springville, Maine.

"But less messy is to wrap them in bright red or orange vinyl tape put out by 3M. It's not affected by weather and doesn't get soiled or wear off," Dick says. T59



Measurements

Prism Cruising

Basal Area Value Table

“For basal area values of single trees in connection with stand marking, I made a table in 1958 that might help your readers.” So writes Will Stiell, Head, Silviculture Sec. of the Petawawa Forest Expt. Station, Chalk River, Ontario.

Will's approach is most interesting. Here's his table: T80

Department of Fisheries and Forestry
Canadian Forestry Service

EQUIVALENT BASAL AREAS

Diameter Class of Smaller Tree

Diameter Class of Larger Tree	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	-																													
2	4.0	-																												
3	9.0	2.2	-																											
4	16	4.0	1.8	-																										
5	25	6.2	2.8	1.6	-																									
6	36	9.0	4.0	2.2	1.4	-																								
7	49	12	5.4	3.1	2.0	1.4	-																							
8	64	16	7.1	4.0	2.6	1.8	1.3	-																						
9	81	20	9.0	5.1	3.2	2.2	1.6	1.3	-																					
10	100	25	11	6.2	4.0	2.8	2.0	1.6	1.2	-																				
11	120	30	13	7.6	4.8	3.4	2.5	1.9	1.5	1.2	-																			
12	140	36	16	9.0	5.8	4.0	2.9	2.2	1.8	1.4	1.2	-																		
13	170	42	19	11	6.8	4.7	3.4	2.6	2.1	1.7	1.4	1.2	-																	
14	200	49	22	12	7.8	5.4	4.0	3.1	2.4	2.0	1.6	1.4	1.2	-																
15	220	56	25	14	9.0	6.2	4.6	3.5	2.8	2.2	1.9	1.6	1.3	1.1	-															
16	260	64	28	16	10	7.1	5.2	4.0	3.2	2.6	2.1	1.8	1.5	1.3	1.1	-														
17	290	72	32	18	12	8.0	5.9	4.5	3.6	3.0	2.4	2.0	1.7	1.5	1.3	1.1	-													
18	320	81	36	20	13	9.0	6.6	5.1	4.0	3.2	2.7	2.2	1.9	1.7	1.4	1.3	1.2	-												
19	360	90	40	23	14	10	7.4	5.6	4.5	3.6	3.0	2.5	2.1	1.8	1.6	1.4	1.2	1.1	-											
20	400	100	44	25	16	11	8.2	6.2	4.9	4.0	3.3	2.8	2.4	2.0	1.8	1.6	1.4	1.2	1.1	-										
21	440	110	49	28	18	12	9.0	6.9	5.4	4.4	3.6	3.1	2.6	2.2	2.0	1.7	1.5	1.4	1.2	1.1	-									
22	480	120	54	30	19	13	9.9	7.6	6.0	4.8	4.0	3.4	2.9	2.5	2.2	1.9	1.7	1.5	1.3	1.2	1.1	-								
23	530	130	59	33	21	15	11	8.3	6.5	5.3	4.4	3.7	3.1	2.7	2.4	2.1	1.8	1.6	1.5	1.3	1.2	1.1	-							
24	580	140	64	36	23	16	12	9.0	7.1	5.8	4.8	4.0	3.4	2.9	2.6	2.2	2.0	1.8	1.6	1.4	1.3	1.2	1.1	-						
25	620	160	69	39	25	17	13	9.8	7.7	6.2	5.2	4.3	3.7	3.2	2.8	2.4	2.2	1.9	1.7	1.6	1.4	1.3	1.2	1.1	-					
26	680	170	75	42	27	19	14	11	8.3	6.8	5.6	4.7	4.0	3.4	3.0	2.6	2.3	2.1	1.9	1.7	1.5	1.4	1.3	1.2	1.1	-				
27	730	180	81	46	29	20	15	11	9.0	7.3	6.0	5.1	4.3	3.7	3.2	2.8	2.5	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	-			
28	780	200	87	49	31	22	16	12	9.7	7.8	6.5	5.4	4.6	4.0	3.5	3.1	2.7	2.4	2.2	2.0	1.8	1.6	1.5	1.4	1.3	1.2	1.1	-		
29	840	210	93	53	34	23	17	13	10	8.4	7.0	5.8	5.0	4.3	3.7	3.3	2.9	2.6	2.3	2.1	1.9	1.7	1.6	1.5	1.3	1.2	1.2	1.1	-	
30	900	220	100	56	36	25	18	14	11	9.0	7.4	6.2	5.3	4.6	4.0	3.5	3.1	2.8	2.5	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.1	-

NOTE

(a) This table is for use in stand marking where control of density is exercised by manipulation of the basal area. For example, if the number of 7-inch trees which will give a total basal area equalling that of one 12-inch tree is required, the answer (2.9) is found at the intersection of the 7-inch column and the 12-inch line.

(b) Values are given to two significant figures only, ensuring sufficient accuracy for the above purpose.

Basal Area Tally

"Simple but handy way of keeping approximate basal area marked for thinning is to tally BA of marked trees with a three-digit tally whacker on your belt," so says Jim Vadnais of the Merrill and Ring Tree Farm at Pysht, Wash.

"In commercial thinnings of 8 inches to 30 inches d.b.h. I tally whole feet of BA (i.e. 14 inches is 1, 19 inches = 2, 24 inches = 3, etc. and every other 10 inch tree =1). If you need more accuracy, or average d.b.h. is less, tally each .5 sq. ft. BA (thus 10 inches =1, 14 inches =2, 19 inches = 3, etc.)

"Until I get in the groove when starting to mark, I attach a rough table of number of clicks per d.b.h. to my paint can, but soon remember the numbers.

"Two or more tallys (color coded for species?) provide more detailed tallying.

"But hang your tallys where they won't snag on limbs or brush or you may have to contend with an unhappy logger!" Jim says.

(Ed. note: The following conversion table of inches d.b.h. to BA in sq. feet will help you decide how accurate your local tally should be if you use Jim's method. (You could tally in one tenth of a square foot if your trees are small. T78

DBH	BA	DBH	BA	DBH	BA
4"	.1	14"	1.1	22"	2.6
6"	.2	16"	1.4	24"	3.1
8"	.4	18"	1.8	26"	3.7
10"	.5+	(19"	2.0)	28"	4.3
12"	.8	20"	2.2	30"	4.9

Prism On Tatum

"In angle gage cruising in flat country with a prism, here's a handy way to carry and use your prism:

"Clip it to the inside of the cover of a tatum with a Binder clip so it extends a half-inch above the edge of the tatum. With the tatum open and in position to write in it the prism would show over the upper right corner.

"The left hand holds both tatum and prism if a right-handed man uses it," notes Andy Leavitt, Iron River District, Ottawa NF (R-9). T30

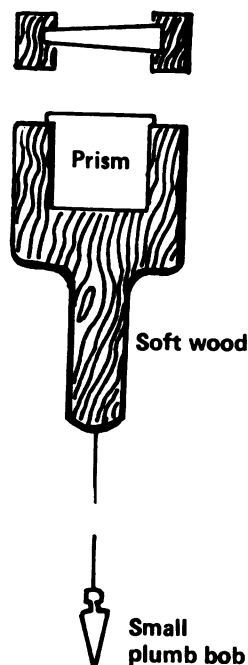
Color Coded Prisms

More than one prism on a cruising job? Color-code to prevent switching them. A felt marker on the prism edge and a dot beside the recording column or page will help prevent errors.

Plum-Bob Your Prism

Prism cruisers on flat land need to keep their wedge prisms from tipping. (Prism cruisers on steeper land tip their prisms intentionally to compensate for slope.) And everyone needs to keep his prism centered on the plot. Harold Barnett, Post Forester at Ft. Gordon, Ga., says to make a slingshot handle of soft wood, the opening notched for the prism to slide in. On the handle hang a small plumb bob to keep the device straight.

Angle gage cruising knacks developed by Walt Knapp, Joe Duprey & Jim Bracken of the Winema Forest (R-6) were passed along by Norm Gould, now R.O.T.M. (Sales Preparation & Valuation). T7



Handy Walking Stick

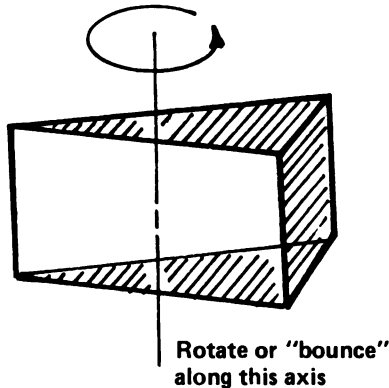
Get on the stick in cruising! The old-fashioned walking stick can be indispensable for keeping your balance, marking plot centers, & knocking surly critters on the head. Use it to steady your relaskop or prism mount, and attach a Jacob-staff ball-and-socket for more precision.

King Check Pencils

Use "King Check" pencils on aerial photos. Available in many colors; smear, heat, water resistant; will not damage photo in normal application, and you can erase easily. The big advantage is the thin line -- that won't cover a half-section! T72

Bounce Borderline Trees

Trouble with borderline trees? "Bounce" them with your prism. Rotate prism in the horizontal plane. (See below.) The image seen thru the glass will "bounce" against the tree & rebound. If the image "bounces" just before hitting the tree, the tree is "out." If it hits, the tree is "in."



Aerial Photo Carrier

Carry your aerial photos in a handy spot. LEV No. 10 large binder clips will clip your photo case to the inside of your cruiser's vest. Handy, and protected from brush & weather. T72

Plots

Laying Out Square Plots

"We had to lay out 162 square 4-milacre plots in a pine regeneration study," relates Seth Evans of the Southern Station at Brewton, Alabama. "We found a quick, accurate way.

"Since plots will be re-examined often, logged, treated for hardwood control and prescribed burned, they had to be laid out right.

"We tried a staff compass and tape, and a double right-angle prism, but they took too much time.

"So we cut two milacre rods (6.6 feet long) and one rod 9.31 feet long, the hypotenuse of a milacre. As we surveyed plot locations we established two points on each 4-milacre plot, used the rod to locate the other seven points.

"The system is fast and accurate -- keeps traffic off the plot. One man stays at plot center, another works around the outside. Error of closure was small, even through brush, logs, rocks, trees and logging slash," says Seth. T44

Record Slope

"Our cruiser records the average slope on all plots," notes Bruce Groves of the Boise (R-4). T19

Clear Cruise Data

"How do you record your cruise data? Are they clear enough to stand in court when an appeal is made? Will they contribute to the court's respect of your professional judgement?" asks Al Sump (TM Appraisals, W.O.). T27

Measuring Plot Diameters

"Measure plot diameters with steel-core plastic clothes-line," advises Bart Lebsch, Chevalon District of the Sitgreaves (R-3). "Make a loop 18 inches to 2 feet long and cut the line to the right length (measure from the end of the loop.) Place loop over stake in center of plot and drag line over arm to questionable trees. In going to next plot, run arm through the loop and line will drag. Never hangs up." T10

Fishing Pole -- Plot Measurement

Foresters often need a 1/100-acre circular plot (for seedling survival counts, etc.). Bob Herbst, Asst. Area Forester for the Minn. Div. of Forestry at Cambridge, Minn., suggests a light and easy-to-carry glass-fiber telescopic fish pole to secure an accurate radius. His instructions:

a) Cut off 12 foot pole to 11.775 feet (11 feet 9.3 inches)

b) Mark pole from top, when extended, with paint marks at 1 foot intervals. This will be useful for intercept method of measuring site index in plantations, for height measurements of planted trees, for range-finding with angle gages.

c) Carry a fish line and bobber. T39

Mark Plot Trees Permanently

"Mark your permanent point sample plot trees with a 4 inch galvanized casing nail driven about 1/2 inch into the stump at ground level and pointing at plot center," says Phil Thornton, formerly T.M., R-9, Now W.O. (Prog. Plan.).

"Record the distance and azimuth to each tree and tally clockwise from north. Thus, the trees are permanently marked, are identified by a tree number on the tally sheet, the d.b.h. measurement point is 4 1/2 feet above the nail, and best of all the nails are inconspicuous unless you're looking for them -- no need to be concerned about biased treatment of the plot trees." T38

Clothes Line – Plot Measurement

“We are cruising and selling posts and poles by areas here,” says Jim Ficke, of the Pike National Forest (R-2).

“We are using 1/10 and 1/20 acre plots since there are many stems per acre and little variance in the stands. However, these plots have to be accurate.

“For a plot radius tape we use brightly colored plastic-coated wire clothesline.

“We tie a large washer to one end and pivot it around a nail stuck in the ground. (Ed. note: Also stuck thru a piece of geophysical flagging and left there to facilitate your cruising check?)

“Tape is cut to exact length of plot radius. These tapes are easy to see, slide thru brush easily and save time,” Jim says. T41

Marking Point Centers

One of the best methods of marking point centers for cruising is with plastic flagging. Drive a little stick through a short length of red or yellow tape and stick it in the ground. Carry a grease pencil and mark the point location or number on the flag. Doesn't take any time and comes in handy many times in the future. T10

Tree Height

Clinometer Chart

“Using a clinometer for determining log heights?” asks Jerry Decker, Sequoia Forest (R-5).

“I find it handy to prepare a chart of the lowest clinometer readings needed to tally the logs in a tree. (For instance, the chart below assumes a length over a half log -- considering trim -- to be recorded as a full log.

“Then I print the chart in ballpoint ink on the inside left flap of my cruiser's vest. Writing fades slightly when the vest is washed, but is easy to darken again.”

<i>No. Logs</i>	<i>Least Reading</i>	<i>No. Logs</i>	<i>Least Reading</i>
2	25 ft.	8	124 ft.
3	41 ft.	9	140 ft.
4	58 ft.	10	157 ft.
5	74 ft.	11	173 ft.
6	91 ft.	12	190 ft.
7	107 ft.	13	206 ft.

Tree Height Training Aid

Having trouble training tree scalers to judge merchantable tree heights? Clarence Stilwell of the Coeur d'Alene in Region 1 marks log heights on “training” trees from 1 to 6 logs high. Reports great assist in training. (Ed. note: To avoid influence from established marks on trees, photograph other suitable numbered trees, show heights on photos taken from “judgment points” (a) Paint big numbers in white paint on base of trees. (b) Climb, establish marks with band(s) of white paper and take photo. (c) Paint merch top diameter point(s) on hidden side of tree to forestall a reclimb.) T1

Stump Height Locater

“Accurate stump-height location on cruise trees from 100 ft. distance needs practice too,” claims Grover Payne on the Greenhorn Dist., Sequoia Forest (R-5).

“I painted a line on my paint gun at the 12 inch mark with fluorescent international orange paint. When the paint can's attached (to a Nel-spot gun) the line will be on the handle grip behind the trigger or pump lever. This target speeds up the work and improves cruise accuracy,” says Grover. T62

Sun Spotting Live Crown

“Hard to tell the base of a tree crown in live-crown ratio measurements? Sure can be if you're about 40 feet away,” avers John Woodward of the Geo. Walton Expt. Forest (SE Sta.).

“But get your tally man to stand near the tree and shine a mirror spot on the trunk where the live crown starts. Of course you do need some sun -- but even a little will work,” John says. T67

Mirror Uses

(Ed. note: Other timberbeast uses for mirrors:

1) To point out, locate & see knot scars when grading trees.

2) When scaling (water, log deck, truck, or even mill deck), to look at brands, defect indicators, etc., mount a bike mirror on your hard hat to illuminate those dark stains, interior logs, cracks, etc., or see that log brand even beneath the water. Mount a mirror and floodlights to illuminate the far ends of logs on the milldeck so you can see both ends simultaneously. The mirror-reversal effect makes it easy to check for twisted splits, etc. Probably the mill owner would install these scaling helps if you explained how important it was for more accurate scaling.

3) When chaining, flash a mirror thru the brush to keep the compassman knowing where you are. On dark days use a flashlight.) T67

Growth And Cores

Counting Increment Cores In Dark

"Working in dark swamps where the sunlight never shines?" asks Stan Myslinski of the Ridgway R. Dist., Allegheny Forest (R-9). "Kind of difficult to count growth rings on increment cores, then, isn't it? Particularly if you're used to counting cores in the sunlight."

Stan says he holds the core between his index and middle fingers, parallel to the fingers, and shines a penlight up thru the core. On long cores they can be marked with pen or pencil where the counting stopped, reversed, and the counting resumed.

"Cores can be counted faster and more accurately, regardless of weather or species," according to Stan. "And you can save 15 to 30 minutes a day, depending on the number of cores you must count." T87

Ink To Count Rings

"Increment core rings on some species are more visible when moistened with saliva," notes John "Zeke" Hornick, Regional checkscaler in R-9.

"But the best way I've seen yet was to dip the cores in ink -- a light blue or purple. T39

Chalk To Count Rings

"Hard to read increment cores?" asks Robert Maeglin of the F.S. Forest Products Lab.

"Position the core with grain vertical, rub the core with soft chalk and then wipe it clean. Rings will show up much better." T78

Biltmore Stick To Count Rings

"Hard to read growth rings on increment cores?" asks Tom Hennessy, Service Forester for Ohio Department of Natural Resources at Findlay, Ohio.

"In wet cores rings show up if you can reflect sunlight thru them. Do this by placing the core on your Biltmore stick, hold it between chest- and waist-level in a patch of sunlight. Face the sun, hold the stick in the sunlight, your head in the shade.

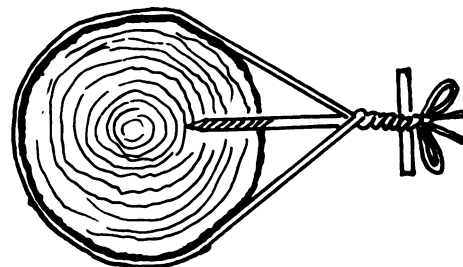
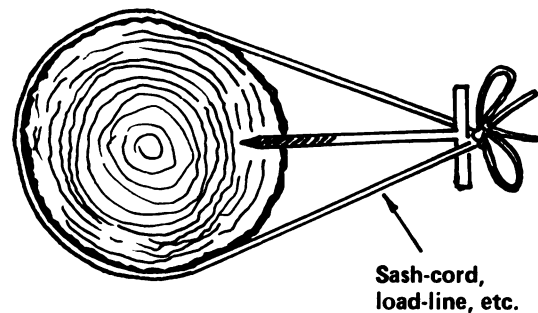
"Tip the stick slightly back and forth until the light reflects thru the core. If you'll place the core on the log rule side of the stick, you can read growth between the inchmarks. (So can anyone you're demonstrating to!) Waxing a small section of the stick will also help reflect light," notes Tom. T85

Boring Into Hard Trees

"Force your increment borer into hard trees with a sash-cord," advises Harry Hopkins, Mad River District, Six Rivers Forest (R-5).

"Clothesline or similar cord should be long enough to reach around the trunk and borer handle as shown below. Tie cord over the handle with a bow and start turning handle. Cord twists around the shank of the borer and draws the bit into the tree.

"After the borer starts into the tree you can release the cord by pulling out the bow." T27



Bark Thickness Idea

"Pine bark thickness is tough to gauge from an increment boring because the bark breaks up when the core is extracted," so notes David Stack of the Washburn Ranger District, Chequamegon Forest (R-9).

"To avoid the break-up, insert the borer a short depth and remove it without extracting the core.

"Now bore the 'operational core'. When you extract it, the bark will be supported between the two cores and be accurately measured," says David. T27

Curing Tree Sections

Curing small tree sections for study? To keep them from splitting, sand them and spray with liquid plastic on both sides soon after you cut them. "They'll cure out with no checks," assures Reed Thomson, Escalante R.D., Dixie Forest (R-4). T9

D-Tapes And Log Tapes

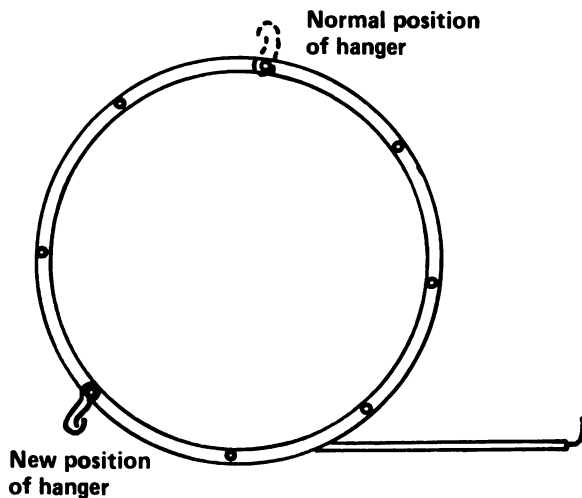
Improving Automatic Rewind Tape

"Your auto-logger's tape will work better and last longer with a few simple changes," advises Dave Gutcher of the Deschutes Forest (R-6).

"Move the hanger to the position shown below. Remove the tape from the spool and turn it over so the numbers will be on top.

"The tape will now wind off the top of the reel rather than the bottom, which will eliminate its binding against the sides of the spool and the roller.

"A bicycle spoke for the tape nail is hard to beat, also. And to hang the tape below your cruiser vest, use a short Arlberg ski strap," suggests Dave. T72



Increase Tape Life

"Don't snap your tape -- wrap it," says Joe Andreske of the Ottawa Forest (R-9).

"Logger's auto-rewind tapes speed up many foresters' jobs," Joe says. "But when you jerk loose the anchor pin to retract it, in it comes miles per hour! It whips over & around obstacles, can well snap off its end.

"But wrap the end 4 - 5 inches with electrician's tape, and *that* problem, at least, will be over!" Joe avers. T68

Finnish Caliper

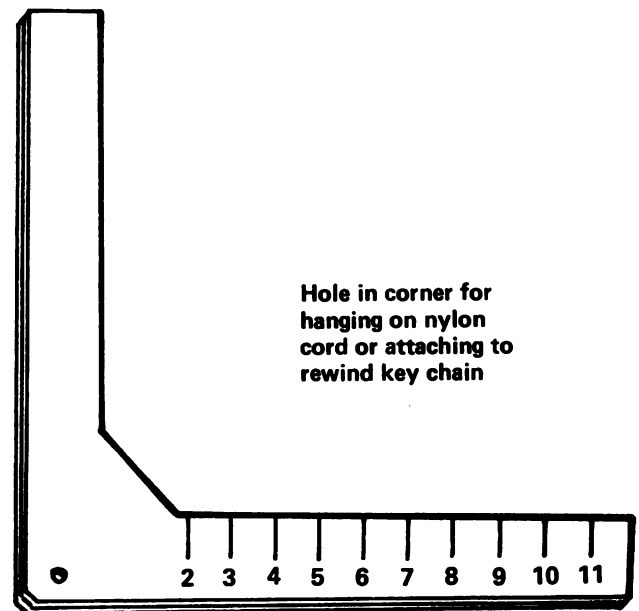
Ever hear of a Finnish Caliper? Riley Gilkey of the Groveland District, Stanislaus Forest (R-5) says it greatly speeds up measurement of small diameters in thinning sales.

Riley's version is real simple. Consists of a square (almost the same shape as a carpenter's square but about 8 inches on a side, made of $\frac{1}{4}$ inch plywood or two sticks glued together exactly at right angles.

From where the two inside edges of the square intersect (or would if the corner weren't braced as shown) draw, at half-inch intervals, lines about 1 inch long on the $1\frac{1}{2}$ inch arm of the square. Label the line that's 1 inch from the intersection, 2, the next 3, etc., to the end of that arm.

To use, place the arms against the tree, read the diameter at the tangent point of the marked arm, interpolating as necessary. Accurate to about a quarter-inch according to Riley.

(Ed. note: Riley's is a simpler and more easily handled version of the "boot jack" caliper recommended for very small diameters that have an angle less than 90 degrees. Thus the marks are farther apart, easier to interpolate between.) T75

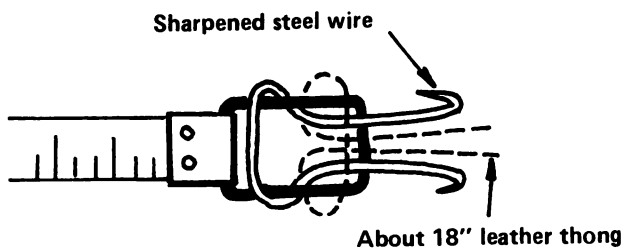


Sure Hook D-Tape

Not much water among Bart Lebach's rolling yellow pine hills on the Sitgreaves NF (R-3). Maybe to keep his skill he's extended the same technique to taping a tree that many of us use in taking a trout.

He flicks a tape around the tree, sinking the hook in the bark, with the micro-second skill of a dry-flyer.

A closer look at Bart's "hook" explains things- We've sketched it below. Consists of a steel wire bent around the tape loop as shown and sharpened. But the real secret is the 18 inch leather thong shown by dashed line in sketch. It gives weight to the tape, momentarily holds the hook in contact with the bark while Bart sets the hook with a reverse tug on the tape. Be sure the thong tends to hold the hook in the bark rather than away from it. T22

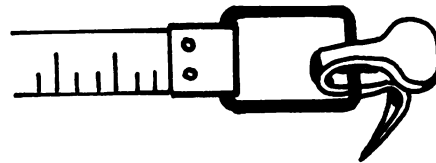


Bart Lebach's "Snake-Fang" tape-end

Horseshoe Nail Hook

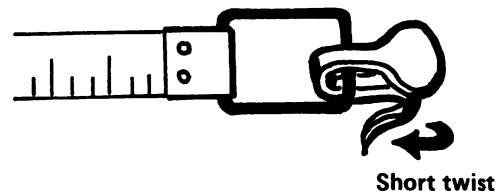
"Horseshoe nails for the ends of loggers' tapes are a lot easier on the thumb than many rigs I've seen in the woods," says Swede Eids of the Yakima Indian Agency at Toppenish, Washington.

"They're easy to bend, as shown, and hold well in bark or wood. This isn't a new idea but one that apparently a lot of people don't know or they'd use it," notes Swede. T73



Improved Horseshoe Nail Hook

Mike Pernicka of the Paulina Ranger District, Ochoco Forest (R-6) says, "Unless you do have the twist, the nail may hold so well you'll snap the tape or have to return to pull it from the bark." T74



Positioning D-Tape

"To make a tape crawl into position when D-taping on steep slopes, learn the old lineman's throw used to move a climber's rope up a tree," says John Hall, formerly a capable Timberbeast on the Klamath Forest (R-5), now refugee-ing in the R.O.

"You can get a perfect positioning of the tape in one throw, with experience.

"To start, just walk the tape around the tree making no special effort to get it high on the lower side.

"Stand on the upper side of the tree with the hook in the left hand and the case in the right 20 to 30 inches apart. Twist wrist and arm of right or case-holding hand upward and clockwise. To throw the tape, quickly straighten out your right wrist and arm in a throwing motion and pull on the hook end of the tape at the same time. Do it again if the tape isn't perfectly positioned." T36

Traverse And Compass

Abney Level Check

"An Abney Level Check on a carpenter's level alone is not sufficient," warns Ken Smith, TM Staff of the Modoc Forest (R-5). "It's only approximate."

"You still need the fore-sight and back-sight between two posts or objects, an adjustment to split the difference in readings, and a final check on a steep slope or angle. To verify this, try adjusting an out-of-whack abney," Ken challenges.

Ken sent us copies of some pages from the Forest Service "Abney Level Handbook" by H.A. Calkins & J.B. Yule which nail down his statements.

The three adjustments outlined include:

- 1) Prism and cross-hair slide, to bring the vial's etched line into coincidence with the cross-hair for level readings;
- 2) Glass vial parallel to line of sight (the two-tree method);

- 3) The height-of-glass-vial adjustment for making the cross-hair and etched line coincide for all readings.

(Adjust this by "cut and try" -- and on steep angles remember the etched line should intersect the bubble near the flat or concave side to reduce refraction distortion.) T81

Light Up Your Clinometer

"Trouble reading your Suunto clinometer on dark days or in heavy stands of timber?" asks Schuyler Davis, Check Cruiser for the Washington State Department of National Resources.

"Try holding a small pen-light or even a match next to the open- or face-side of the instrument." T43

Easy Acreage Check

"To determine the acreage of small areas, follow this simple rule," says Foyer Olsen, Cedar City Ranger Dist. of the Dixie National Forest (R-4).

1. Determine number of square feet in a given area. (Average length x av. width, etc.)
2. Multiply the number of square feet by 23 and point off 6 decimal points. The result equals acres to nearest 1/100. (Less than actual by only .002 per acre.)

"This system is quick, easy and accurate. Saves time since it is not necessary to divide by square feet in an acre," Foyer says. T61

One And Two -- Chain Marks

"Have you ever yelled 'Hold up' to your cruising partner until you could find where the one- or two-chain mark was located on your chain?"

"Some fingernail polish can put an end to all this looking," says Homer Yokum, Greenbriar Ranger District, Monongahela Forest (R-7).

"Paint a strip about six inches long on both sides of the brass tab at zero, and at one and two chains. A spot of paint on the trailer will also help you spot it." T44

Pulpwood Volume Short-Cut

Here's a short-cut method for volume in rough cords based on point-sampling with a basal area factor of 10:

$$\frac{\text{No. Sticks in Avg. Tree} + 1}{2} \times (\text{No. Countable Trees}) = \text{Cords Per Acre.}$$

Advice from Burl Ashley, Farm Forester at Delaware, Ohio. (Check for trees in your area.) T16

Tape Coiling Hint

Trouble coiling up the trailer on a trailer tape? Ken Dupuis of the Flathead Indian Agency (Montana) suggests marking the trailer with fingernail polish at the intervals used in wrapping the tape. Your tape ends up uniform, without a couple of wraps longer or shorter than the rest. When you "throw" it, it isn't likely to kink or break. T16

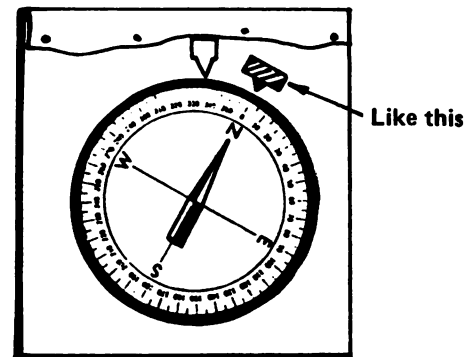
Declination Setting

"To set off declination on Silva-type compasses most folks either scratch the declination in the plastic or add it in their heads," notes Ronald Roginske of the Bozeman Ranger Dist., Gallatin Forest (R-1).

"Easier and more readable this way: a) Attach a length of tape to the underside of the compass. Inside edge of the tape to correspond to the bearing of the declination. b) Trim excess tape from the edge of the compass.

"Even a paint-splattered compass is easy to set and to read," advises Ronald. To change declination for a different area, pull off the old tape, apply a new one.

"Perhaps luminous tape might help in dark woods or at night," comments Ronald. T50



Pulpwood Volume

Pulpwood pile volumes are simple to measure with method suggested by Norm Conrad (Cut-Foot Sioux R.D., Chippewa Forest, R-9). He finds a rough average height to the nearest foot and uses that as a "base" for his other measurements.

He takes regularly-spaced measurements along the pile and mentally adds the "pluses", subtracts the "minuses" in 10th's of feet. At the end of the pile he divides whatever total he's added up by the number of measurements and adds that much to his "basic" measurement.

For instance, he might use 4 feet as his rough base. The first measurement might be 4.8 feet. He'd think "plus 8"; the next measurement might be 4.3 feet. He'd add the 8 he was "carrying" to 3 and "carry" 11. The next measurement might be 3.8 feet. That's -2 on his "base", so he'd subtract 2 from 11 and "carry" 9. Suppose he took 10 measurements along the pile and ended up "carrying" 20. He'd divide 20 by 10. Adding .2 to his base of 4 feet would give his average pile height of 4.2 feet.

He says you can take lengths and heights at the same time: Use a 5 foot to 7 foot stick graduated in feet and tenths. Square up the end of the pile and start measuring lengths. Mark the end of each stick length with an a-b-c, etc., and take the height at each point as described. At the end of the pile you'll know how many stick-lengths you've taken and the average height of the pile. T8

One Person Chaining

"One person can chain distances as fast and accurately as two," claims Mackay Bryan (S.E.Sta.). Easiest to use a 1 chain tape (such as Lufkin OC-3066A) with 100 links tip to tip, with a reinforcement clip at each end. Ream the eye at each end slightly and through them attach the eyes of pins made from 25M bronze welding rod. To make pins, bend an inch of rod into an eye. Solder the gap of the eye and fill the lower half of the eye with solder. In use, insert one pin in the ground and tape the first chain, insert the second pin, pull on the tape to remove the first pin, & go ahead, switching ends of the tape. To correct for slope, shoot slope forward and back and add both corrections at 1,3,5 etc. chains distance. (Adaptable to trailer tapes too.) T5

Eyeglass Magnetic Attraction

If you hold a compass close to your eye for a reading, be sure to check your eyeglass frames for magnetic attraction, advises Clayton Schooley, Michigan Department of Conservation, Michigan State Forest at Ispeming, Michigan.

"When I first used a Suunto, I seemed to be confused most of the time -- until I found my eyeglasses pulled the compass needle about six degrees!" T43

Fingernail Polish -- Declination

Set off declination on your compass this way: Cut a small piece of plastic with a point on one end. Fasten to the compass back plate and paint the point red with fingernail polish. (Use vinyl-plastic tape, if you have it.)

"Avoids errors resulting when just a scratch or other mark is used," says Art Schimke, Chetco Ranger District, Siskiyou Forest (R-6). T16

Paint Aids Chaining

"Use a pressurized paint can in chaining distances," advises Danny On of the Kootenai in R-1. Instead of scuffing a hard-to-find-mark on the ground, paint an X. Paint on log, brush, snow; retrace lines at will. Write distance with paint spray on the nearest tree. Tom Glazebrook now of WO suggests painting the random line on the ground to save hunting for stakes. (Use a different color for random lines??) T3

Paint Every Fifth Stake

"Dip every 5th stake in white paint when marking seedlings in plantation rows," advises Elmer Shaw of the Ry. Mtn. Exp. Sta. Helps line up rows for checker in subsequent years and if a stake is knocked over the big hole is apparent. T4

Flag Measurement Trees

Hard to find your numbered, sample trees in sample-tree-measurement sales? Larry Colton and his timber people (Wasatch Forest; R-4) improved Bill Hill's earlier idea of a red flag in the stump of each numbered tree with a practical wire stake and a good method of placing it. They use a roll of extra stiff No.13 smooth galvanized wire, cut six-inch pieces, make a small loop on one end for a strip of red plastic tagging and sharpen the other end. Larry says, "Two men working together can make 50 stakes in 15 minutes."

Timber markers carry a supply of the wire stakes with them. When they number a sample tree, they jab a stake into the bark beside the number. When the cutter fells the tree, he jabs the stake in the stump. Flags are easy to see on stumps and numbered trees easy to find without checking felled trees. They've had excellent logger cooperation. They recover a good percent of flags when they scale for correction factor. The Wasatch had such good results they plan to require these flags on all sales in '58. T8

Woven Metallic Trailer Tape

"Woven metallic tapes can easily be marked for trailer tapes," Ralph Jaskowski, Wenatchee Forest contributes.

"Our R-6 inventory field crews for several years have been using 100 foot metallic tape refills instead of steel tapes. They are more flexible, won't kink or break, don't rust nor attract compasses.

"Their cloth-like finish is ideal for marking as a trailer tape. For instance if you want a 1 chain trailer, mark the slope % on the reverse side of the tape with waterproof magic marker. For example, mark 25% at 68.3 ft., 30% at 68.9 ft.

"You never need to refer to tables. Just read your slope, let out tape to the slope distance on the back of your tape.

"If you want a trailer for more than one distance, use different colored magic markers.

"Incidentally, we don't use the tape case. We wind the tape by figure-eighting it between the extended thumb and little finger." T64

Two Section Line Tags

"Put two section line tags on a section line tree next to a road," suggests Thomas of the Stanislaus (R-5). "The one on the front will get shot up or removed but nobody thinks to look on the back of trees!" T6

Colored Pens On Cruise Cards

"Colored ball point pens don't need sharpening and are easy to read on cruise cards," says Art Mason, Skykomish Dist., Snoqualmie Forest, R-6. "We use different colors to show different species." T18



Photo courtesy of Mansfield Library, University of Montana

Sales Administration

Compliance Date

"When trying to get compliance from the operator on an overdue item -- ask operator to set a reasonable date by which time the job will be completed," says Bill Newkirk, Shoshone Forest (R-2).

"Three things are apt to happen: (1) They name a date earlier than you would (but if not, try to accept it anyway, if reasonable.) (2) He is likely to meet the deadline. (3) If he doesn't meet it he seldom talks back if you shut him down 'til it's completed." T20

Loggers Cooperation

Hank Hays (South Tongass Forest, R-10) suggests some of the following steps:

1. Commend a logger on a piece of good work before bringing up the "fall-downs".
2. Send each logger a letter at the end of the season expressing your appreciation for his cooperation. Particularly do so if he has turned in a job on a fire. In that case send him a letter of appreciation soon after the fire.
3. Be definite when you discuss your findings with a logger. He likes to know *exactly* your viewpoint so he can deliver the goods to suit you.
4. Although we are usually on the run, take time just to be sociable before leaving the area.
5. Keep out of the way of the rigging! T10

Paint Utilization Scale Logs

"Paint utilization-scale logs," says George Jackson, (W.O.-T.M. in Portland). "Makes your utilization requirements definite and you can more easily check compliance." T6

Track Activities

"Keeping track of changing sale activities on so many sales is a real job," notes Gary Lytle, Ontonogan District, Ottawa Forest (R-9). "Try this:

"Set up a looseleaf notebook of sale area maps in plastic document protectors, currently post status of sale activities with china marking pencil (for temporary changes), felt tip marker (for more permanent changes).

"This would also be useful for other field maps," Gary says. T61

Felling And Bucking Spec Cards

"We print the felling and bucking specs for our larger timber sales on a wallet-size card," says Dick Baker, PSO on Sitka Ranger District, North Tongass Forest, Alaska.

"We pass the cards to the fallers and leave a supply with the operator to give to new fallers.

"There's room enough to outline requirements for merchantable trees, minimum merchantable logs, stump heights and trim allowance.

"Saves confusion, cuts down on faller's forgetfulness and facilitates explaining felling and bucking requirements.

"Instead of a faller only hearing the specs once or twice, he can read them and refer to his own copy.

"A job printer can make them up for pennies each."

U.S. FOREST SERVICE FELLING & BUCKING SPECIFICATIONS on ALP Contract Allotment

Merchantable Tree:

*Any live Spruce, Hemlock or Cedar
25% sound or better*

Minimum Log:

*Length -- 16 feet
Small diameter -- 6 inches
50% sound volume
Contains 20 board feet or more*

T36

Ragland's Sale Administration

Introduction

Timber sale administration is an extremely important phase of your experience and training. No other Forest Service work is so directly related to preparation for a District Ranger's job or can itself offer a more satisfactory career. The aptitudes of a successful timber sales officer are the same as those of a good District Ranger or Forest Supervisor.

Few men have natural aptitudes for successful timber sales administration. Most of us must work and study to learn to do this work with success.

Poor sales administration is more often due to weakness in human relations than in the technology of the job. Here are hints to help you be more effective in your timber sales work.

Our Objectives in Timber Sales Work

As a timber sales officer your main purpose is to get the timber crop harvested with minimum damage to soil and water and maximum assurance of the continuing productivity of the land. You must do this in a way practical under existing operating conditions, policies and methods.

The timber sale contract is one aid to help you with this purpose. Other aids are technical knowledge, and especially knowledge of the skills of human relations. You must acquire technical and human relations knowledge through experience and training. Your Ranger will help you but most training is a matter of helping yourself.

The timber sale contract is a legal document. We expect and must have compliance. Compliance involves public relations with other operators too. You must be impartial. It also involves obtaining what we are paying for in appraisal allowances.

Even so, the contract cannot so well anticipate on-the-ground conditions as to leave no room for independent judgment. *Sometimes* desirable practices on the ground are not reported in the contract at all; yet you must promote those practices to the extent you can.

Cooperation vs. Police Power

Efforts to induce compliance or conformance are more effective through education and cooperation than through the exercise of police power. In fact, in a democracy the use of police power will fail, utterly, until a large majority of people have been induced, through education and cooperation to support the law policed.

Foresters are most effective as advisors, trainers, persuaders and friends. They are too thinly scattered to be effective policemen.

We cannot successfully ignore the importance of education and cooperation in our timber sale administration. We do have a measure of police power and occasionally must use it. However, when we are forced as a last resort to exercise our police power it often means our administration has broken down somewhere.

In other words we don't want our TSO to go on a logging operation with an officious manner or any frame of mind induced by the thought that he wears the badge of an officer and carries a big stick of authority. Rather, the timber sale officer's frame of mind should always be one of desire to help the operator carry out his responsibilities.

How to Encourage Cooperation

Getting cooperation of operators is largely a matter of gaining their respect. This we have to earn -- we cannot take it for granted. Following are some methods of operation that can help promote respect for a timber sale officer. Most of them boil down to "good human relations".

1. *Get acquainted* with the operator and his men. They cannot respect you if they don't know you -- *informally and on a first-name basis*. This means stop and chat or whittle once in a while, especially near the beginning of acquaintance. Be friendly and patient.

2. *Be sincerely interested* and sympathetic with the operator's problems; learn and discuss his problems. Learn to speak his language and to place one's self at his viewpoint. In discussing his problems, you'll find frequent opportunity to throw in a few informative licks concerning your problems.

3. *Avoid passing the buck* to the Ranger or to the contract. (a) If you convey the impression that you do not believe in the Forest Service requirements, or know the reasons for them, your operator is not likely to be cooperative. (b) You need to know what must be done and why.

4. Recognize the limitations of the operator, his men, equipment and the weather. Work which is impossible to do under the circumstances, or unreasonable, should not be requested. The job requested will not be done, thus setting a precedent of noncompliance and leading to loss of operator respect for you.

An operator may present reasons for not doing many different jobs. You must learn to sift truly valid factors from the wishful thinking of an operator.

Related to this matter is the possible increased damage to forest values that may result from requiring an operator to do a poor job over again or to do an overlooked job under bad weather conditions. In road building, for example, if an operator has been allowed to build road off the planned location, weigh the factors involved. They may indicate the desirability of living with the mistake rather than trying to erase it. (However, guard that operators do not take advantage of situations brought about by design rather than by accident.)

Follow-up on instructions to operator and on his promises. It's very important. The operator may have all good intentions. However, he may have breakdowns or his instructions may have not been well given to his men. He may have personnel problems. There is some tendency for us to assume that the operator with his higher pay rates and freedom in hiring and firing, has no personnel problems. Actually he does have problems. He may have more than we do. Frequently his men are not so dedicated to their work or to their company. Good, reliable foremen are hard to find.

Your responsibility as a timber sale officer does not end with informing the operator. This responsibility ends only with the completed job on the ground. Don't assume a job is done until a personal inspection shows it to be. Inspection of fire lines is a typical chore easily neglected -- usually with poor jobs resulting.

Be most careful to avoid accusing any operator of promising one thing and doing the opposite. There are often extenuating circumstances which may absolve the operator.

Even if one is certain of an operator's negligence, try to allow him an "out". This does not mean you should sanction or permit continuation or acceptance of a mal-practice. The point is that maintenance of a friendly climate is generally most effective in promoting better work on the part of the operator.

Consult the operator for advice. Although you may not choose to follow all his advice, he may be one of your best consultants on logging and road building problems. He is more cooperative when you indicate your respect for his judgment.

When the operator puts you on the spot with a what-shall-we-do-here question, it may be best to postpone decision, until you have considered his version of the various alternatives. The operator may have a satisfactory solution not apparent to you. Or perhaps you can direct the discussion to where he suggests an alternative that you considered best from the beginning. Free and informal discussion that helps him understand our problems as well as his own will often cause an operator to support our choice though it may be less advantageous to him. Most often you will find a common ground satisfactory to both of you. Generally your objectives have more in common with his than there are differences.

Method of approach is important. It is seldom wise directly to threaten an operator. This harks back to that police power again.

Suppose, for example, you must threaten shutdown to get compliance. You could say to the operator, "Either you do this or I will shut you down." Or you could say, "Well Sam, I sure hope you can work this out. I don't want you to have to close down the operation. I know you need the logs." These are just two ways of saying the same thing but the latter way encourages more cooperation for you are showing you appreciate his needs.

You'll be surprised how effective a friendly and sincere smile is in the face of an angry operator. Usually he will calm right down if one will smile and calmly encourage him to explain his troubles. Above all, one should control his own temper and tongue. One should try to cultivate the faculty of saying "No" with a smile.

As you become familiar with your operator you will learn that different operators require different approaches. Some may be very sensitive and require a planned approach.

Some may not have much formal education and require approach on their level of comprehension. Some may thrive under lots of ribbing.

The method of approach may well vary under different circumstances with the same operator. For example, when an operator is broken down and about to blow his top from trouble, don't jump on him about a sensitive matter. Best wait and catch him in a calmer mood. You are different also. An approach that works for you may not be effective for another man. To influence human behavior effectively, study yourself as well as your associates. If you become aware of traits in your personality that seem objectionable to others, strive to play down or replace them.

Be firm, fair, and impartial with all operators. A forest officer with the reputation of firmness will command more respect and cooperation than one the operators feel they can sway or take advantage of.

Avoid feelings of indebtedness to any operator for special favors received. At least don't let them show or influence your impartiality. Operators quickly suspect collusion or favoritism between the Forest Service and particular operators. Do not trade favors.

Don't make decisions influenced by one's dislike for an operator or one's desire to punish or spite an operator. As much as we might like to do this sometimes it can only lead to trouble.

Don't try to bluff or imply you know more than you actually do. This kind of insinuating does not go over. If you don't know the answer your only recourse may be to admit it and try to find out the answer as soon as you can. As Will Rogers said, "Everyone's stupid about some things. The things are just different for different people." ... Why should *you* be an exception?

The Importance of Timing

1. Crucial times in the life of a sale:

a. The first crucial time in your conference with the operator (plus his key men is possible) prior to any operation. This crucial meeting is where you insure the operator understands the sale requirements. The logging plan should be initiated or discussed. Contract digests should be available and discussed.

b. Other crucial times in the life of a sale are at the start of the different phases of the operation. For instance by the first or second day of falling in right-of-way timber you should be out on the job checking and informing. Explanation of marking rules in the office is rarely sufficient. Follow-up on the ground at the beginning will get the loggers started off right. After the R/W timber is half fallen is too late to correct what is already done. Also it will be harder to correct wrong practices.

2. Other problems:

a. One of your problems is to keep informed of what is happening on the operation. Require logging plans and approve changes to them. Check with the scaler, truckers, and other workers. Get the operator or his representative trained to keep you informed.

b. Perhaps the most difficult problem of all is keeping the stumpage payments up to date -- in advance of cutting. A healthy cushion is desirable, but difficult when times are tough. A resourceful TSO will plot with psychological aids to keep his margin healthy. For example, one method is to play up the angle of over-cut. Find out the volume of the company cruise. If the company cruise is higher than the Government cruise, agree with it and use their figure for securing payments.

Start early on payment requests. Don't wait until there is just barely time for the payment to go in and get the stub back. Always clear with the operator when sending a bill for payment, and get his commitment for date of payment -- then follow up. The operator may not agree with the billing and hold up his check for a week or two if the matter isn't settled beforehand.

Anticipate Problems

You can learn to minimize your problems by anticipating likely areas of trouble and remove the factors that make trouble before it is too late.

You might anticipate that a particular road fill could be lost if not carefully made. You should plan to be on hand during this particular job to insure proper compliance. If the fill is lost due to faulty installation when you weren't there, your administration has failed. Of course the job can be done over again but the damage and waste cannot be undone.

You may anticipate that an operator is likely to drag his feet on roadside slash cleanup, a new practice to him. Here you should be certain to detail the job required and press for early compliance.

It's important to tell all prospective bidders at time of sale of unusual expenses or requirements or changes in policy that will be reflected in the timber sale contract.

You'll have to be on your toes to anticipate problems that may arise from changes in operator personnel, breakdowns in equipment, changes in weather, and changes in market condition.

Efficient Use of Your Time

The demands for the time of a sales officer on a busy district frequently appear to be more than he can supply. You'll have to plan the use of your time and take advantage of systems that permit efficiency.

1. *Where possible do more than one job or visit more than one sale on each trip to make better use of travel time.*

2. *Plan what you have to do on each inspection. It's so easy just to ride out to a sale and stand around with little accomplishment.*

3. *Don't spread your time too thin. Make your inspections count. There is tendency for a TSO with many active sales to spend too little time on each one. This results in more trips than necessary. Cover less ground per trip and take time to cover all items that need attention.*

4. *Make copious use of notes and check lists. There are so many details to keep tab on that you can easily overlook some. Use brief, simplified contract digests of pertinent sections.*

5. *Gain the habit of being curious and observant. You'll pick up information easily passed by. Some of it will affect the planning of later trips. Jot down notes for the sale folder concerning progress of sale and cost data.*

6. *Always try to inspect sales in company with operator or company representative -- or at least with the foreman. You can save time here. Often, after inspection alone, you'll have to find a responsible company man for discussion and revisit the same ground. Try to set up joint trips with the operator ahead of time.*

7. *Don't do the operator's supervisory work for him. Some operators will encourage frequent checks of work in progress and try to use the TSO in foreman capacity. Thus the TSO can be put on the spot frequently with respect to details and the operator does no better job than absolutely necessary.*

Also if later defects show up, the operator may pass the buck back to the TSO.

A certain amount of strategic training of the operator and his men is good practice. Effort here may pay off in the future.

What A Ranger Expects of His Sales Officer

1. *Assume personal responsibility as assigned.* Don't pass the buck or shift decisions on routine matters to the Ranger. It is better for you to get your feet wet with a few mistakes if you are to grow in capacity for the work.

2. *Go to the Ranger for help* whenever a real need arises. As you become more experienced, you will require less and less assistance.

3. *Keep the Ranger informed* of progress of sales and of unusual problems or occurrences. Toss short notes on his desk during the busy field season.

4. *Remember that the measure of a man's success* is based on results, not effort. To instruct the operator is not enough. What are the results on the ground?

5. *Grow in the job.* You should take advantage of your job and self-study to enhance your knowledge and ability. The Ranger will help and advise toward promotion into higher assignments. However, you yourself must maintain an inner urge and initiative.

6. *Develop broadly.* Be interested in other activities. Take advantage of opportunities to serve in other fields and enlarge your knowledge.

7. *Recognize our need for improving techniques.* Ours is an interesting, growing, and challenging profession. We must have new blood, new ideas, and new methods. We want men who can submit to the discipline of present policies in day-to-day jobs but who can at the same time be dissatisfied, be forever questioning why, and be exploring ways and means of improvement. Don't be discouraged if your idea or suggestion is rejected at first. Don't give up. Many good ideas have been first rejected and later adopted. The Ranger does not want a "yes" man. T10



**% DEDUCTIONS
FOR DIAMETER
DEDUCTIONS
(16' logs)**

FORM CLASS										DIB	SAP ROT IN INCHES									
66	68	70	72	74	76	78	80	82	small end		-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
D.B.H (in inches)											(in percent)									
15	14	14	14	14	13	13	12	12	10	33	50	50	66							
18	18	17	16	16	16	16	15	15	12	13	25	50	63	63	75					
21	20	20	20	19	18	18	18	17	14	9	27	36	45	64	73	73				
24	24	23	22	22	21	20	20	20	16	13	31	38	50	56	63	75	81			
28	26	26	25	24	24	23	22	22	18	14	24	33	48	52	62	67	71	81		
30	30	28	28	27	26	26	25	24	20	14	25	36	43	50	61	64	71	75		
34	32	32	30	30	29	28	28	27	22	9	15	27	36	46	52	58	67	70	76	
36	36	35	34	33	32	31	30	29	24	5	18	25	30	40	48	55	60	65	73	
40	38	37	36	35	34	33	32	32	26	8	20	24	34	40	44	52	58	64	68	
42	41	40	39	38	37	36	35	34	28	5	14	21	31	35	43	48	52	59	64	
46	44	43	42	40	40	38	38	36	30	8	12	17	24	30	39	43	50	55	58	
48	47	46	44	43	42	41	40	39	32	4	11	18	22	26	33	38	46	49	56	
52	50	48	47	46	45	44	42	42	34	3	8	11	18	24	28	31	38	43	50	
54	53	52	50	48	48	46	45	44	36	4	13	15	20	23	28	34	37	40	46	
58	56	54	53	52	50	49	48	46	38	4	14	18	25	27	31	34	38	43	46	
60	59	57	56	54	52	51	50	49	40	7	11	14	23	27	33	35	38	41	45	
63	62	60	58	57	55	54	52	51	42	5	11	17	20	23	31	34	40	42	45	
66	65	63	61	60	58	56	55	54	44	6	10	14	19	24	28	31	38	41	46	
70	68	66	63	62	60	59	58	56	46	5	7	12	16	20	25	30	33	35	42	
73	70	68	66	65	63	62	60	58	48	4	8	12	15	19	23	27	31	35	38	
76	74	72	70	67	66	65	62	61	50	4	8	11	15	19	21	25	28	32	36	

*Example: Tree 18" DBH,
Form Class 76, DIB small
end first 16' log is 14".
If log has 4" sap rot (2"
each side) gross volume
is reduced 45%.*

Scaling

Marking Keel – Pencil Holder

“Have your marking keel-pencil holder handy on your wrist,” says Ed Scales of the Santa Fe (R-3). “Split one end of a leather thong 7 inches long and $\frac{1}{4}$ inch wide so your hand goes through; run the other end through the keel holder and tie a knot. Keel is there when you want it, springs out of the way when you don’t.” T5

Shade Your Scaler

Shade your scaler! Don Redmond of the Sierra, R-5, suggests an inexpensive beach umbrella mounted in a $1\frac{1}{2}$ inch pipe on a truck-scaling ramp to provide shelter from sun and rain when no scaler house is available. He also suggests using discarded $1\frac{1}{2}$ inch fire hose riveted on one end and with thongs on the other as a scabbard for scale and cruiser sticks. T3

Cruising Sap-Rotted Trees

Handy tables for cruising sap-rotted trees recently worked out by Rex Baker, Mapleton Ranger District, Siuslaw National Forest (R-6). Rex notes that his tables are useful in the following ways:

- a. Find diameter at small end of butt log in standing tree knowing DBH and Form Class.
- b. To estimate percent cull deduction for inch diameter cuts in butt log, given DBH, Form Class, and estimated inch cull deductions.
- c. To convert inch diameter deductions to percent cull deduction in any 16 foot log in the tree or as bucked. (Rex says there are closer relationships between the 16 foot tables shown and tables for 32 foot and 40 foot logs.)
- d. For scaling, a fellow can cut off the Form Class and DBH section of the table.
- e. In standing tree cruising if the trees average one general form class like 76, just trim off the other rows of figures.
- f. Or leave the table as is and use the DBH part for the butt log, estimating diameter small end for other logs farther up the tree.

“Just copy the table and glue (Elmer’s) on back of inside cover of tatum. For wet weather cruising glue piece of Dow Chemical’s ‘Handi Wrap’ plastic over table,” advises Rex. T50

Scaling Station Blinker Light

“Put a yellow road-blinker light above your scaling station sign. (The sign that tells trucker to stop his motor, set brakes and keep his cotton-pickin’ hands off the binders while you’re scaling),” advises Chick Abell (T.M.-R.O.-R-5).

Mount the switch in the office. Blinkers are not expensive, are available from mail order houses. T18

Scale Stick Cleaner

“Many of your present readers probably missed Mathews of the Apache Forest (R-3)’s tip on waterless soap to clean scalesticks and hands,” notes Don Stoner, Eastside Area Checkscaler-Cruiser (R-6).

“Even today a lot of scalers don’t know of this easy answer to the pitch problem. One brand comes in a toothpaste-size tube for easy carrying. One scaler reports that his wife applies this soap to his pitchy pants awhile before laundering them.

“So if your lady’s overly stuck on you, hand her a tube of soap.” T33

Mid-Log Diameter

Need the mid-log diameter of long logs in the woods? Bill Enke (Nez Perce, R-1) says to measure outside the bark both at the midpoint and the small end to find the taper. Add this difference to the diameter of the small end inside the bark. T7

Short Log Scaling

“Short logs in the center of a truckload got you stumped?” asks Preston Ream, our ingenious Timber Tipping Forest Scaler from the Ochoco (R-6).

“I can measure about 90% of these logs with a small pocket tape on the end of which I soldered a small hook so it will catch on the log.

“Then I attached the tape to the handle end of the scale stick. I can now reach in four to six feet and measure the logs rather than estimating diameters. Tape doesn’t unbalance the scale stick.” T36



Management & Communications

Leadership

Leadership -- Al Groncki, Salmon River District, Klamath Forest, R-5 passes along this thought:

At a meeting of young foresters, the Forest Supervisor was asked to tell about leadership.

Without saying a word he cut a 10-foot length of rope and laid it on the floor. Then he took one end and tried to push the whole rope. When that didn't work he walked around to the other end and pulled it right into line behind him. T15

Measurable Training Objectives

Measurable training objectives prove as elusive to describe as they are hard to think up, for most of us. And since they aren't just a gimmick but truly the target of all our actions in training, we can't, really, dodge them ...

Bert Holtby (Training Systems -- W.O. -- and voted "most valuable man of the year" by the Nat'l. Soc. for Programmed Instruction!) offers us some action verbs to help. They'll punch harder, sharpen our thinking better than the wishy-washy "understand", "familiarize", etc.

Identify, arrange, name, demonstrate, construct, describe, define, state (a rule or formula), solve, design, prove, answer, show how, diagram, build. T65

Molding Employees

Don't try to mold your employees into your likeness. Remember, one of you is plenty. T19

Getting Things Done

Jack Shields (Then TM "Push" in R-10, RO, now ADP Expert in R-6) sums up the importance of good human relations with a sentence: "You can make people do things, or you can make people *want* to do things. Your approach is often the key." T19

Know It All

"Forestry is based on the knowledge of nature; the deeper we penetrate its secrets, the deeper the depths before us."

"It is a sure sign of shallowness if anybody believes he knows it all."

"Things look very differently in the forest from what they do in books; the learned man stands, therefore, frequently left by his learning."
Heinrich Cotta, *The Elder*. (1817) T40

Decision Making

Decision making and clear communication are both vital in organizations such as ours ... Here's your *First* "Guest Editorial" in *Timber Tips*:

There must be decision-makers in every organization. Decisions must be made each day if an organization is to survive and prosper.

Each person is a decision-maker, no matter what job he fills. Some decisions are major, some minor. Often it's difficult to distinguish between them. An apparently minor decision to finish a task more promptly might have considerable impact on others and on the business itself. The more good decisions all of us make the better off we are.

If decisions are clearly communicated, reliability will displace rumor, confidence be assured. If a supervisor not only gives his instructions clearly but explains the reasons for the decision, the instructions generally will be accepted and carried out with dispatch.

This can be important. There are times each of us are told to do something we feel does not make sense. Instead of complaining, shouldn't we discuss the matter with our supervisor and perhaps offer our idea of a preferable solution? In this way our actions can be helpful and positive. If still overruled we have the satisfaction of knowing we tried to help.

We should remember that usually there are good reasons for doing things about which our supervisors have more information than we have.

Here the primary duty to explain rests with the supervisor. He is busy and may feel his subordinate understands the situation.

The puzzled employee's responsibility is to speak up. After all, either can open the communications door with the other. Neither has a priority. Good communications is a two-way street.

This simple person-to-person relationship, when understood and used, will do a great deal to eliminate misunderstanding and unhappiness.

Norton Clapp, President
Weyerhaeuser Company

(adapted with Mr. Clapp's permission,
from "The Weyerhaeuser Magazine".)

Innovators

"There is nothing more difficult to take in hand, more perilous to conduct or more uncertain in its success, than to take the lead in introduction of a new order of things, because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new." Prince Machiavelli, 1469 - 1527 T55

Good Supervisor

One of the marks of good supervisors: they encourage people to have ideas. And when they judge an idea, they think in terms of what it *can* do, not what it can't do.

Ideas are seeds; they need to sprout and feel the sun. Wait 'till they develop before you pull the weeds. Then weed precisely, not with clumsy or thoughtless fingers. (Suggested by item in C.S.S. Work Impr. News) T20

Creative Employees

"Don't let your nut bolt," advises Lou Bissell, Maine Extn. Forester.

"Don't lose your 'creative' employee just because his ideas rock the boat. He may soon be 'creating' for you!"

"Warning: If your agency treasures people who cause no problems, you are taking the sure road to mediocrity," says Sylvia Porter.

Research Institute of America lists ways to identify the creative employee:

- a) Notices problems which have previously escaped attention.
- b) Has many alternative thoughts on any given subject.
- c) Relates to his own work ideas he has heard elsewhere.
- d) Asks questions no one else has thought of.
- e) Is willing to try unexplored sources for answers.

"Of all ways to simplify work, we would select first the *open* mind. T69

Priming The Pump

"Priming the old pump is an art that will not long be with us, but thirty years ago, when I was the forest ranger at Cut Foot Sioux in the old Minnesota National Forest, priming the pump was a daily chore. If I wanted fresh, cool water from the depths of the well, I had to prime the pump. The old pump worked fine when it was primed.

"Now pumps may obsolesce, but the principle of pump priming will ever be with us.

"We pour in hard work to draw out worthwhile accomplishment. We prime with study to obtain knowledge; we prime with understanding to secure good will.

"Many an old pump needs nothing more than a modicum of judicious priming for a fresh resurgence of usefulness. I sometimes think this applies not only to old pumps, and old forests, but to old foresters as well." Cal Stott, S&PF (R-9) T19

Open Mind

"An open mind is important, for minds are like parachutes; they work only when *open*.

"The largest stumbling block to simplifying work lies not in the technical field, but in the minds of people doing the work who feel they are using the best methods possible.

"The main obstacle found in both industry and offices is resistance to change." T24

S.F. Kaplin,
General Electric Company

Parts Per Million

Ever actually try to think of what references like "parts per million" mean?

Tree-farmin' Extension Forester Art Sowder (WO) clipped some comparisons for us:

1. One inch is one part per million in 16 miles.
2. A postage stamp is one part per million of the weight of a person (presumable "average" person).
3. A one gram needle in a one ton haystack is one part per million.
4. One part per million is a minute in two years.
5. Your hand on the ground covers five millionth of an acre.
6. A million dollars in thousand dollar bills makes a stack eight inches high (we wouldn't know). A billion dollars in thousand dollar bills is a stack higher than the Washington Monument. T44

Innovation

"Don't think the change around the corner is anything to fear. Sometimes people resent change because they are afraid it is an admission that what they were doing yesterday is wrong. That's a crock ... what they were doing yesterday was probably right under the conditions of yesterday. But that doesn't mean it's automatically right under the conditions of today or tomorrow.

"To ... improve our performance we ought to be asking ourselves daily if we're doing things because it's the best way or because we simply want to stay in a rut ... because we're afraid to innovate." T69

Merrill Robison, Weyerhaeuser V.P.



United States Department of Agriculture
Forest Service
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