

Technology for

Alaskan Transportation

Winter 1989 --Volume 14
Alaska Transportation Technology
Transfer Program

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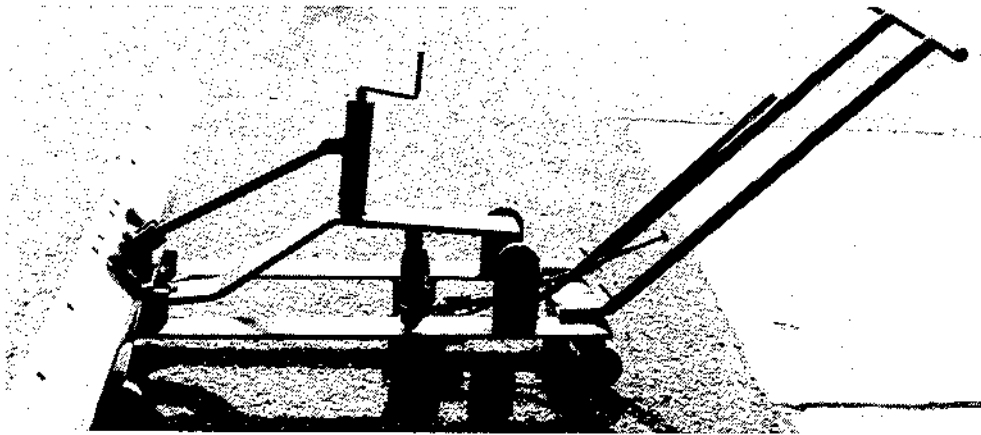
WINTER TRICKS

It's cold, dark, and snowy. Winter storms are a harsh test of autumn preventive maintenance efforts. To help take the sting out of winter's challenges, here are five handy dandy ideas from "snow country" maintenance crews.

From Texas comes a snowplow blade dolly, pictured below. There are adjustments for raising and lowering the blade and for adjusting the angle for easy bolt alignment, thus saving your back. Call us if you want the construction plans.

From Iowa comes an adaptation of the bicycle world's safety flag, that long, flexible pole with the florescent orange triangle. Crews attach it to the corners of their snowplow blades. Since that edge is sometimes obscured by moving snow, the flags help the drivers keep an eye on the edge of the plow for more accurate snow removal. The base of the pole is pushed into a heavy-duty antenna spring attached to the blade by a small bracket. The spring helps solve breakage problems.

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BRIDGE TIDBITS

Winter hardly seems the season to discuss bridges, but the "tidbits" below have a connection.

Salt (NaCl): There is still some use of salt as a deicer, although it is well known that vehicle and environmental damage occur. It's also the curse of the concrete deck, but since it's out of sight, not everyone realizes it.

Concrete decks, as they weather the seasons and loads, eventually develop cracks. Even small cracks are channels for water. Salt + water + iron = rust. Iron reinforcing steel expands as it rusts, pressing against the concrete around it until

something gives—the concrete. The cracks are now bigger, and the process gains steam.

How to slow this spiral? The Federal Highway Administration (FHWA) encourages the use of protective systems such as epoxy coated rebar and/or low permeability concrete overlays for new decks. Low permeability overlays, membranes and AC overlays, and cathodic protection are FHWA options for reconstructed decks and new add-ons to existing structures, but FHWA also encourages experimentation with new and

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ALASKA TRANSPORTATION
TECHNOLOGY TRANSFER

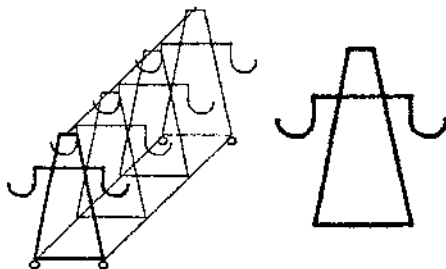
This newsletter is funded by a grant from
the Federal Highway Administration
and the Alaska Department of
Transportation & Public Facilities.

Winter Tricks
(continued from page 1)

There are a couple of versions of the next item, a safety bumper for plow blades. On curbed streets, the snowplow must run with the blade against the curb. To protect the blade, some crews bolt an angled metal plate to the "rubbing" edge. The angled piece projects beyond the edge of the blade and reduces wear on the moldboard part of the plow because the plow itself no longer rubs against the curb. An Alaskan version uses straight pieces cut with a cutting torch from old cutting edges since they already have a hole for a bolt. The "bumpers" will need replacing, but it's a whole lot faster and cheaper to do than replacing the entire blade.

Facing a pile of tangled tire chains in your garage can put a growl into anyone's day. The crew in Spencer, Iowa developed an efficient way to store truck chains so they can be clean, safe, and ready for use. It's an A-frame cart made of 2-inch pipe and 1-inch square tubing. Four "A"s (more like flat-topped triangles) are made with pipe for the long legs and tubing for cross bars (a short one at the top, a longer one at

the base). Three lengths of square tubing (same length as the chains) connect the "A"s at all 3 "points", one across the top bars, the other two under the bottom bars. The four chain hooks, also square tubing, look something like back-to-back "J"s hung from a bar (see figure). These get bolted high on the "A"s. A couple of diagonal braces might be a good idea, too, and luxury would be casters on the four corners.



The last gadget isn't one to make. It's one to consider buying. Though we don't normally endorse products, this fits our safety interests enough that we'll quote from the Wisconsin T2 newsletter: "When equipment is out in snowstorms its tail

lights can be dimmed by snow cover. A Michigan company has a solution: heated tail lights. This simple device costs about \$30 per lens or \$48 for a whole light. It is spliced into the tail light circuit and draws about 1.5 amps per lens. The company offers a lifetime warranty unless you break the lens."

"The heat keeps the lens clear of snow and ice. Endurance tests show no shortening of bulb life from the heat. Some insurance companies are giving discounts when whole fleets are fitted with the devices."

"For more information contact Ron Evert, Polk Diesel and Machine, 608/244-4784." We haven't been able to find the product locally yet.

Have a warm, safe winter. Let us know if any of these ideas are helpful or if you have any other Alaskan winter tricks or variations you'd be willing to share with your fellow readers.

Adapted from Country Roads & City Streets, September 1989, and Crossroads, Summer 1989, and assisted by Texas T2 and Alaska DOT&PF personnel. ♦

New NCHRP Report

The National Cooperative Highway Research Program (NCHRP) has a new report coming out in FY 91 titled *Improved Visibility for Snow Plow Operations*, Report Number 6-12.

It can be ordered from NCHRP next year when the report is complete and published. NCHRP reports are available from: Transportation Research Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

Mike Gavin, an Alaska DOT&PF Maintenance and Operations (M&O) Area Superintendent in Fairbanks, has been nominated to serve as a panel member for the project to develop the report. A DOT&PF employee since 1970, Mike has also been Acting M&O Director in Anchorage and has a background in construction. He obtained a Bachelor's degree in civil engineering from the University of Alaska in 1973 and a Master's degree in 1975; he is also a registered engineer in the State of Alaska. Mike's career in maintenance dealing with the distinctly different characteristics of wet and dry snow in the varied climates of both Fairbanks and Anchorage makes him uniquely suited to serve on this panel. ♦

Calling All Operators: Trucks & Buses

If you operate any large vehicles, buses or are a commercial driver, be sure to check the CDL news update that's on the UMTA RTAP insert this issue. ♦

News & Views

The MUTCD is Ready

The U.S. Manual on Uniform Traffic Control Devices (MUTCD) is the national standard for signs, signals, and pavement markings. Every jurisdiction must follow the standard. The new, 1988, edition incorporates more than 130 changes to the previous, 1978, edition. Some of the changes (revisions 1-5) have been publicized, distributed as page changes, and are already in effect; more than half have not been previously publicized.

Agencies that do not properly use devices with standard designs or messages may be vulnerable legally if an accident occurs and it can be shown that improper devices were a contributing factor. The new edition is available from the Government Printing Office for \$22 (stock no. 050-001-00308-2) and from the American Traffic Safety Services Association (ATSSA) at a better price, with no tax or handling and postage charges:

Prices (US \$)

# of copies	members & public agencies	nonmembers & private agencies
1 - 10	\$12	\$16
11-49	\$11	\$15
50 - over	\$10	\$14

ATSSA is also distributing Part VI of the MUTCD (*Standards for Work Zone Traffic Control*) in a handy reference format, a 9"x16" handbook.

Prices (US \$)

# of copies	members & public agencies	nonmembers & private agencies
1	\$3.00	\$4.50
2 - 9	\$2.00	\$3.00
10- 49	\$1.75	\$2.65
50 - 99	\$1.50	\$2.25
100 - 249	\$1.25	\$1.85
250 - 499	\$1.10	\$1.65
500 - over	\$.95	\$1.45

Postage will be invoiced for orders of 10 or more copies of Part VI after the copies are mailed.

Mail orders to:

American Traffic Safety Services Assoc.
ATSSA Building
5440 Jefferson Davis Highway
Fredericksburg, VA 22401

(VISA and MasterCard accepted.)

Adapted from Rural Technical Assistance Program Quarterly Newsletter, September 1989, and assisted by FHWA and ATSSA. ♦

1990 National RTAP Conference

Networking the '90s

University of Alaska Fairbanks
August 5-9, 1990

Alaska's Governor Steve Cowper and Department of Transportation and Public Facilities' Commissioner Mark Hickey sent letters to top level FHWA personnel, national legislators, and T2 Center Directors. The Alaska T2 Center also sent out an introductory mailing which included a draft schedule of events, travel and housing information. A mailing list form was sent to T2 directors and staff. Those forms are slowly returning to us. Please send them in soon.

Speakers and moderators who have already volunteered their services are being approached to make good on their "promise", and others are being located, contacted and confirmed.

Many of you in Alaska are technicians on the practical end of transportation work:

equipment operators, construction workers, right of way agents, environmental professionals, and managers. If you would like to be involved in the conference, we invite you to do so. For example, one of the daily sessions focuses on users who have benefited from T2 training, the lending library, or a newsletter article. Your positive experience with the Alaska T2 Program could be highlighted during that session. Please call Larry Johnson at (907)474-7637. Look for further news in the summer issue of this newsletter which will carry an agenda of topics, speakers, and a daily fee schedule. The 1990 National RTAP Conference represents a unique opportunity for you to meet not only your local T2 staff, but other states' T2 staff and nationwide FHWA personnel as well. ♦

SUNSHINE TRAVEL URGES YOU TO MAKE YOUR AIRLINE RESERVATIONS NOW. CALL 1-800-622-6449; MENTION RTAP. BOOKING RESERVATIONS FOR THE CONFERENCE IS ALREADY BECOMING DIFFICULT.

Bridge Tidbits
(continued from page 1)

promising protective systems...and using deicers other than salt.

Winter Work: Kudos are in store for two Alaska DOT&PF engineers, Karl Mielke and Mark Mills, for their work on the Parks Highway Riley Creek Bridge and the article they published about it in the August *Roads & Bridges*. One of the piers "frost jacked" and had to be replaced or the whole structure would eventually be at risk. Aesthetics and economics governed this project, and traffic had to be maintained with no detour.

The new pier was placed under the middle bridge span, 3.5 ft "streamward" of the old pier's center line of bearing. Since the middle span now overlapped to the "bankside" of the pier, the end span was supported from that cantilevered end by hanger bar and pin assemblies at each steel girder line. The new pier consisted of two 3 ft diameter pipe piles painted with an anti-adfreeze coating and driven deeply into the riverbed. They were placed 2 ft outboard of the deck on either side, in 5 ft diameter bore holes that were backfilled with 10 to 15 ft of washed gravel, and capped with a steel box pier cap. The coating, backfill, and driving depth (below seasonal frost even during low water

levels) should mitigate further frost jacking, a major objective.

The ground "bankside" of the old pier was thawed and then excavated. Yes, off-tourist season construction was a requirement. The superstructure was temporarily raised 6 inches, the old pier's piles cut, the pier rotated to ground, then demolished, and the superstructure returned to grade. Simple, aesthetic, and dollar-wise. In contrast to an anticipated replacement of the whole structure, this rehab job saved the state \$600,000.

New Federal Code: a new *Bridge Recording and Coding Guide* will become effective on January 1, 1990. All inspections conducted after 1989 must conform to the new specifications. Expect major changes in: 1) condition ratings for deck, superstructure, and substructure; 2) condition ratings for channel, channel protection, and culverts; 3) operating and inventory rating related to bridge capacity; 4) general codes for the appraisal ratings; 5) critical feature inspections and dates; 6) cost allocations and computations; and 7) score evaluation. Copies of the guide (FHWA-ED-89-004) have been distributed to state agencies, but it is not yet available to the private sector.

Adapted from FHWA, Concrete Bridge Decks, Roads & Bridges, August 1989 and The Bridge, Summer 1989. ♦

Technology for Alaskan Transportation is a quarterly newsletter that informs local transportation people in government and industry of useful publications and services. The newsletter reports on practical information, new technology, and learning opportunities such as workshops, seminars and videotapes. To get on our mailing list, to receive any of our services, or to contribute to the newsletter, contact:

Alaska Transportation
Technology Transfer Program
University of Alaska Fairbanks
Room 233, Duckering Building
Fairbanks, Alaska 99775-0660
(907)474-7733/5428

About Our Program

The goal of the Alaska Transportation Technology Transfer Program is to help transportation agencies obtain useful information and training related to roads, bridges, and public transportation. In addition to our newsletter, we provide low-cost seminars and workshops, provide copies of useful technical reports and videos upon request, and answer phone and mail inquiries related to transportation technology. If we don't have the answer, we will refer the question to a suitable specialist.

The Alaska Transportation Technology Transfer Program is a cooperative effort between the Alaska Department of Transportation and Public Facilities, and the University of Alaska Fairbanks, Institute of Northern Engineering. This program is funded by the Federal Highway Administration and the Alaska Department of Transportation and Public Facilities (DOT&PF).

The following people are involved in the program.

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Administrative Assistant
Technology Transfer Program
(907)474-5428

Calendar of Events

We will be happy to include any relevant event you would like to publicize. For more information about events in Alaska, call Sharon McLeod-Everette at (907)474-2475, Larry Johnson at (907)474-7637, or Michelle Johnson at (907)474-5428.

1990

- * **January 11 & 12, 1990: Technical Writing for Transportation Professionals.** University of Alaska Fairbanks, Wood Center Memorial Conference Room. Tuition: \$100.00. Contact Lorrie Trimble, (907)474-2444.
- * **January 16 & 17, 1990: Thermal Modeling for Roads and Foundation.** University of Alaska Fairbanks, Room 531 Duckering Building. Contact Michelle Johnson, (907)474-5428.
- January 24-27, 1990: IRWA Course 601, Environmental Considerations.** Sponsored by Juneau Chapter 59, International Right of Way Association. Juneau Travelodge (800-255-3050). Tuition: \$335.00, member; \$395.00, nonmember.

Special tuition rates for DOT&PF personnel. Contact Diane DeRoux or Jane Selvig, SR/WA, (907)364-4222.

March 8-10, 1990: IRWA Course 204, Group Communication. Sponsored by Juneau Chapter 59, International Right of Way Association. Juneau Travelodge (800-255-3050). Tuition: \$275.00, member; \$330.00, nonmember. Contact Hal Cleek, (907)364-4222.

* **March 12th, Fairbanks; 13th, Anchorage; 15th, Juneau: Integrated Vegetation Management.** Contact Michelle Johnson, (907)474-5428.

* **March (date to be announced): Technical Writing for Transportation Professionals.** Anchorage. For further information contact Lorrie Trimble at (907)474-2444.

April 6 & 7, 1990: IRWA Course 801 (Revised & Expanded) Land Titles. Sponsored by Arctic Trails Chapter 71, International Right of Way Association. Regency Hotel, Fairbanks. Tuition: \$215.00, member; \$260.00, nonmember. Contact Peter Schnaars, (907)452-1414.

* **April 25-27, 1990: Pavement Inspection.** Anchorage (Location to be announced) Contact Michelle Johnson, (907)474-5428.

* **April 30-May 2, 1990: Pavement Inspection.** University of Alaska Fairbanks, Room 531 Duckering Building. Contact Michelle Johnson, (907)474-5428.

Late April (date to be announced): 1990 Alaska Transportation Forum. University of Alaska Fairbanks. Contact Dr. Lutfi Raad, (907)474-7497.

* **May (date to be announced): Environmental Auditing for Transportation Programs.** University of Alaska Fairbanks. Contact Michelle Johnson, (907)474-5428.

* **August 5-9, 1989: National RTAP Conference.** University of Alaska Fairbanks. Contact Michelle Johnson, (907)474-5428.

* **T2 Short Courses**



ALASKA TRANSPORTATION TECHNOLOGY TRANSFER

Transportation Technology Transfer Program
University of Alaska Fairbanks
Fairbanks, Alaska 99775-1760

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Please Help Us Help You

Number 15, 1989

The Maine DOT developed and published this chart which we think can be helpful in Alaska. In order to further adapt it to Alaskan conditions, we ask you to review it, note changes, and return a copy with any comments to us. (Let us know if you think it's okay as it is, too.) If we get enough information, we'll adapt it and have it ready for next winter season. Perhaps there will be a couple of versions because of Alaska's strong maritime and interior climates.

GUIDELINES FOR TREATING VARIOUS WINTER CONDITIONS

TEMP. RANGE	TYPE OF PRECIP.	ROAD CONDITION	TEMP. CHANGE	OPERATION	BEGINNING OF STORM	DURING STORM	AFTER STORM
LESS THAN 15°F	DRY SNOW	NO PACKING	FALLING OR RISING	PLOWING	Remove initial accumulation of 1 to 2 inches	As necessary to remove accumulation of 2 to 3 inches	Widen as needed, during regular working hours
				SANDING*	Spot locations as needed @ 1 c.y./ctrline mile with plow	Spot locations as needed @ 1 c.y./ctrline mile with plow	Spot locations as needed @ 1 c.y./ctrline mile
				SALTING**	NO	NO	NO
15°F TO 32°F	SNOW	NO PACKING	FALLING OR RISING	PLOWING	Remove initial accumulation of 1 to 2 inches	As necessary to remove accumulation of 2 to 3 inches	Widen as needed, usually regular working hours
				SANDING	Spot locations as needed @ 1 c.y./ctrline mile with plow	Spot locations as needed @ 1 c.y./ctrline mile with plow	Spot locations as needed @ 1 c.y./ctrline mile
				SALTING	NO	NO	NO
15°F TO 32°F	SNOW	PACKING	FALLING	PLOWING	Remove initial accumulation over 1 inch	As necessary to remove accumulation over 1 inch	Widen as needed, usually regular working hours
				SANDING	Break bond - Apply @ 1 c.y./ctrline mile with plow	Spot locations as needed @ 1 c.y./ctrline mile with plow	Apply @ 2/3 c.y./ctrline mile if temperature below 25°F
				SALTING	NO	NO	NO
			RISING	PLOWING	Remove initial accumulation over 1 inch	As necessary to remove accumulation over 1 inch	Widen as needed, usually regular working hours
				SANDING	Break bond - Apply @ 2/3 c.y./ctrline mile with plow	Spot locations as needed @ 2/3 c.y./ctrline mile with plow	NO
				SALTING	350 lbs/ctrline mile	NO	350 lbs/ctrline mile
ANY TEMP.	FREEZING RAIN OR SLEET	ICY	FALLING OR RISING	PLOWING	NO***	Remove slush as needed	Clean up slush
				SANDING & SALTING	Apply @ 1 c.y./ctrline mile with a mixture of 3 parts sand and 1 part salt	Entire roadway-cont. @ 1 c.y./ctrline mile with a mixture of 3 part sand and 1 part salt	Icy spots @ 1 c.y./ctrline mile
				PLOWING	NO	As necessary	NO
ANY TEMP.	NONE	DRIFTING	FALLING OR RISING	SANDING	NO	NO	As necessary to remove drifts
				SALTING	NO	NO	Icy spots @ 2/3 c.y./ctrline mile
				SALTING	NO	NO	NO

NOTES: A "centerline mile" is defined as one mile of two-lane road.

For salt meeting ASTM Spec. D632, 350 lbs is 1/6 cubic yard (c.y.).

* "Sanding" indicates sand that has been "sweetened" with 80-100 lbs of salt per cubic yard during stockpiling operation.

** "Salting" indicates the use of pure salt.

*** Plowing early is not recommended in freezing rain (helps absorb some moisture and provides limited traction).



For More Information

For back issues of our newsletters and notes, or to get on our mailing list, write: Publications, Transportation Technology Transfer Program, University of Alaska Fairbanks, Fairbanks, AK 99775-1760. For more information, you can also call (907) 474-7733.

Help in Understanding Disk Organization and Protection from Data Loss

DISK ORGANIZATION

Today's computers can have large hard drives containing more than 300 million bytes (300 megabytes) of information. That's the equivalent of 240,000 pages of written text. Even the relatively common 40 megabyte drives contain about 32,000 pages of information. Managing that amount of data requires the same care as you would take to organize your office files. In many respects, the procedures are the same.

The root directory on the disk is much like the file room. It represents the largest unit available. Many people put all files in this directory. This is like throwing all of your files in the middle of the floor. It rapidly becomes impossible to find anything. An office filing system organizes its files into file cabinets, file drawers and files. The design for disk drive management is much the same. Directories are the file cabinets, and subdirectories are the file cabinet drawers.

Subdirectories provide organization of software into types. For ex-

ample, you may create a subdirectory for word processing, another for spreadsheets, another for databases, etc. Each of these can be subdivided into additional subdirectories. Your word processing directory can contain a subdirectory for the software, another for fonts, another for in-house memos and still another for outside correspondence. This provides for easy search of files. It also provides for easy updating of software as new releases come out.

There are utility programs that you can buy to help you organize your disk, but if you want to do it in DOS, it's pretty easy. The Computer Notes insert in the next issue of Technology for Alaskan Transportation will go into more detail about creating and managing directories and subdirectories.

DISK BACKUP

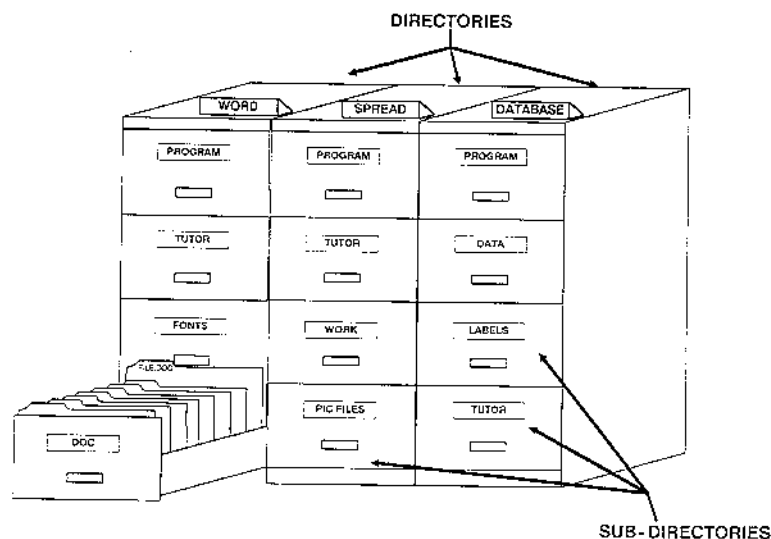
There are three cardinal rules of computing. They are Back-it-up, Back-it-up and Back-it-up. Copy all valuable data onto another disk or tape

regularly. Think of the most important project you have. If a fire destroyed all the records, you would feel devastated.

Hard drives FAIL. It is only a matter of when. The average life of a hard drive is about three years. There are companies that will recover data from a damaged disk at a cost of about \$10 per megabyte with a minimum of \$40. However, they usually take a couple of weeks and you must retrieve all data.

Proper disk organization greatly simplifies disk backup. There is no need to backup commercially available software since you already have the original disk. Usually, commercial software consumes the greatest portion of the available space. Therefore, only your work directories need backing up. If you are using floppy disks as a backup media, the number of disks required is minimal.

How often should you back up your files? That really depends upon how important they are. The greater the loss, the more often you should back them up. Some firms also store their backups at a separate location or in a



fireproof vault. You need to decide on a schedule and stick to it.

You can use DOS copy commands to do your own backups, and there are also several good backup programs available. Each program has advantages and disadvantages. You should consult your local vendor and computer user groups for input.

BATCH FILES

Batch files reduce the extra typing caused by subdirectories. For example, to use a word processing program, a sequence of commands that seem redundant is common:

```
CD\WORDPROC\TEXT
C:\WORDPROC\RUN
```

Batch files eliminate this repetitive typing sequence. Batch files are simply a list of commands you would type in from the keyboard. The only difference is that you can convince the computer to do the work for you once you've taught it how. You can use several methods to do so. The disk operating system (DOS) provides a simple procedure using COPY CON. At the prompt type in COPY CON. Then type in the command sequence you would normally use. Note, COPY CON provides no prompt. For example, to run your spreadsheet program, you may use COPY CON to enter the following file:

```
COPY CON SS.BAT
CD\SPREAD
RUN
CD\
[F6]
[ENTER]
```

The command COPY CON SS.BAT initializes a file and names it SS.BAT. All executable files must have a file extension of ".COM", ".EXE", or ".BAT". (The file extension is the three letters after the ".") Batch files use the ".BAT" exten-

sion. The second line changes the directory to the directory that contains the spreadsheet. The third line tells the computer to run the program, and the fourth line returns you to the root directory. The [F6] tells the computer you are done. From this point forward, all you need to do is type "SS" or "ss" to run your spreadsheet. You can create much more complicated batch files if you wish. Review your DOS manual for further details.

AUTOEXEC.BAT

The AUTOEXEC.BAT is a special batch file which must be located in the root directory. The computer looks for this file when you turn it on. For example, you may want the computer to bring up a menu every time you turn the machine on. You will probably want the computer to set several options such as the screen color or where certain files can be found, etc. You may already have an autoexec.bat file. Check by entering the following command from your root directory: "TYPE AUTOEXEC.BAT". If it is there, review it and compare it to the following example.

```
ECHO OFF
PROMPT $PSG
PATH C:\C:\DOS;C:\BAT;
C:\UTILITY
CLS
```

"ECHO OFF" keeps the computer from printing the commands on the screen.

"PROMPT \$PSG" sets prompt to display the disk drive and the directory at the beginning of each command line. This command can also be used to set the screen color.

"PATH C:\C:\DOS;C:\BAT; C:\UTILITY" provides the order which DOS searches for files. More about this later.

"CLS" clears the screen before continuing.

Again, review your DOS manual or one of the third party books for more information.

THE PATH COMMAND

The path command tells the computer how to look for files. For example, if you type "SS" to run your spreadsheet, the computer with the autoexec.bat file listed above would look into the current directory for SS.BAT. It then looks at C:\DOS, then at C:\BAT, where it is stored. It is a good idea to keep all of your batch files in a subdirectory called BAT or BATCH. The order is therefore the same as you enter it into the path command. You could list all subdirectories in the path command, but conflicts will arise. It is better to limit the path command to those that provide commonly used files.

If you need to know what the current path is, simply enter the path command with no parameters.

IN SUMMARY

There have been three basic concepts presented:

- * Use subdirectories in the same manner that you would organize your office files. Create new ones as necessary to group files in a logical manner.
- * Back up your work files regularly to protect against accidental loss. Don't wait until you get burned to realize how important this is.
- * Use batch files to speed your work.

Each of these concepts will help you increase your productivity with the computer. There are several good books on DOS and disk management in any good bookstore. A rudimentary knowledge of DOS will help sort out many of the common problems. ♦

For More Information

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There are several ways for Urban Mass Transit Administration (UMTA) Section 18 and Section 16(b)2 grant recipients and other transit operators and managers to get help, advice and information—to work smarter.

One method is through the UMTA Rural Transit Assistance Program (RTAP) library of publications and videos that is handled by the Alaska T2 Program. A partial listing of library contents is included in each issue of this newsletter, and a complete listing can be obtained by contacting the Alaska T2 Program. Susan Earp is your primary contact for borrowing publications and videos as well as obtaining a complete library listing. She can be reached at (907)474-7733.

Another self-help avenue may be available soon. UMTA RTAP is investigating the possibility of providing computer bulletin board services. This would allow those needing public domain software to download by calling a specified telephone number and giving a user identification that would be provided by UMTA RTAP. The next issue of *Technology for Alaskan Transportation* will let you know whether we were successful.

You can become a member of a transit related professional association or organization. One that I'm aware of is: Community Transportation Association of America, 725 15th St., N.W., Washington, D.C. 20005, (202)628-1480. CTAA is the result of this summer's merger of two organizations, Rural America and the National Association for Transportation Alter-

natives, both of which have served the field for more than 25 years. CTAA membership is made up of local public and private transportation providers; transit agencies serving special client groups; hospital, nursing home, and human service transportation providers; and local and state officials. It publishes the *Community Transportation Reporter (CTR)*, the only national magazine that is aimed at rural, small urban and specialized transportation issues. (CTR subscriptions are available without becoming a member—\$35 per year for transportation operators, \$45 per year for non-operators.) They will offer training and development, and an array of field services. For example, they will assist operators to improve existing services and they will administer a \$3 million revolving loan fund available to small communities for a variety of development purposes, such as improved passenger transportation. For CTAA membership information, call (202)527-8279.

A telephone service known as a "hotline" can also be a very effective self-help tool. One of the field service hotlines CTAA will be incorporating is: UMTA RTAP HOTLINE (800)527-8279. Another very informative hotline, not a part of CTAA, is the KANSAS TRANS HOTLINE: (913)864-8658.

For Section 16(b)2 operators, UMTA funded a demonstration project recently completed by the state of Louisiana that dealt with reducing capital and operating expenses. The project report presents nine methods for reducing those costs for elderly and disabled persons: joint purchase of

preventive maintenance and repairs, insurance, fuel, tires and other parts; timesharing of vehicles; ridesharing; purchase of transportation services; vehicle leasing; and centralized referral services to match clients with the most appropriate service providers. While the report talks about implementation steps and expected benefits, it does not list cost savings in actual dollar amounts. It does, however, have helpful ideas. The report, *Cost Saving Methods for Special Transportation Programs*, is available at no charge from: Technology Sharing Program, Office of Research and Technology, U.S. Department of Transportation (DRT-1), 400 Seventh St., S.W., Washington, D.C. 20590, (202)366-4997.

We recently received a copy of STARTS, The Special Transit and Rural Transit Safety Program. It was developed by the Transportation Safety Institute, and supplies important driver training information. It's a combination of video, slides, audiotape and workbooks, and covers pretrip vehicle inspection, passenger relations and driver sensitivity, and defensive and safe driving procedures. STARTS is being reviewed in-house, with the intent of making the course available in 1990.

In 1986 Congress passed the Commercial Motor Vehicle Safety Act, which requires each state to meet minimum standards for commercial driver licensing.

Adapted from CTR, June 1989 & September 1989. Assisted by AK Dept. of Public Safety & DOT&PF personnel. ♦

Urban Mass Transportation Administration

UMTA RTAP Notes

The Commercial Motor Vehicle Safety Act of 1986 mandates that every commercial driver in the U.S. must have a single commercial driver's license (CDL) issued by the driver's home state by April 1, 1992. Three objectives will be served: 1) to limit drivers to only one CDL so that a license suspension is effective, and drivers can't "keep truckin'" on another state's CDL; 2) to consolidate a driver's history into one permanent record; and 3) to establish uniform testing and licensing standards.

Each state will use a national computerized clearinghouse, where identifying data will be recorded for each of the nation's 5.5 million commercial truck and bus drivers. The "carrot" in this "carrot 'n stick" act is increased safety; the "stick" is federal highway construction funds. A state loses 5% of these funds if it hasn't complied by 1992 and 10% if it misses 1993.

The act affects everyone who drives: 1) a single vehicle with a gross vehicle weight rating (GVWR) of more than 26,000 pounds; 2) a trailer

with a GVWR of more than 10,000 pounds if the gross combination weight is over 26,000 pounds; 3) a vehicle designed to transport more than 15 persons; or 4) any size vehicle that requires hazardous materials placards. Grader operators are not covered, but dump truck drivers are (dump trucks transport property). Military and emergency vehicle drivers (for example, fire fighters) are exempt. Nonexempt drivers will be required to take both a written and a driving test.

Legislation (SB137) in Alaska Senate State Affairs Committee would amend Alaska's CDL law to accommodate the new federal law. Among issues that remain are 1) whether church school bus drivers are affected and 2) if additional funds will be appropriated. If not, the Alaska Department of Public Safety (DPS) will have to do all the testing within their departmental budget; if so, an outside party may be contracted to administer the skills test. DOT&PF may be allowed to test their own drivers.

DPS has targeted January 1, 1991, to begin testing and licensing, which gives Alaskan drivers 15 months to comply. DPS is working with a task force of industry representatives to tailor the basic federal standardized test and license to Alaska's needs. They may "grandfather" all drivers with at least two years of citation-free driving, waiving the driving test for them. Everyone will take the basic written exam plus additional sections for separate endorsements, such as hazardous materials, double and triple trailers, tanks, and school buses. The school bus endorsement test is a federal option that Alaska has chosen to include.

More information will be finalized by June 1990, and DPS will publicize details.

Adapted from MASS INTERCHANGE, Fall 1989, and Technology News, April 1989, with assistance from the Alaska Department of Public Safety and the Legislative Information Office. ♦

For More Information

For back issues of our UMTA RTAP notes, or to get on our mailing list, write: Publications, Transportation Technology Transfer Program, University of Alaska Fairbanks, 233 Duckering Building, Fairbanks, Alaska 99775-0660. For further information contact (907) 474-2475.

December 1989
Last=520

- ___ **Annual Report 1980/81-National Swedish Road and Traffic**, ID-498, National Road and Traffic Research Institute, 1982, 136pp.
- ___ **Bridges 86 - Replacing Rural Bridges**, ID-507, Roads and Bridges Magazine, 1985, 3pp.
- ___ **Category 5, Structural Design and Hydraulics**, ID-491, FHWA, 1984, 172pp.
- ___ **Cement-Treated Aggregate Base**, ID-504, PCA, 7pp.
- ___ **Construction Analysis:Northbound Pavement Re-construction**, ID-500, Wyle Research, January 1980, 18pp.
- ___ **Country Bridge Replacement**, ID-508, PCA, 1p.
- ___ **Definition of Practices for Bus Transit On-Time Performance:Preliminary Study**, ID-496, Transportation Research Circular, February 1986, 5pp.
- ___ **Development of Improved Traffic Analysis Tools**, ID-511, FHWA, HPNPA, December 1988, 4pp.
- ___ **Education and Training Information Exchange**, ID-492, National Highway Institute, University/FHWA College Curriculum Program, November 1985, 41pp.
- ___ **1981 Federally Coordinated Program of Highway Research and Development**, ID-501, FHWA, June 1982, 36pp.
- ___ **Forest Roads Built with Chuckwood**, ID-516.
- ___ **Guide for Flexible Pavement**, ID-503, State of Alaska, Division of Standards and Technical Services, August 1982, 27pp.
- ___ **Guidelines for Successful Traffic Control Systems**, ID-515, FHWA, Volume 1, Exclusive Summary, August 1988, 41pp.
- ___ **Highway Traffic Noise in the United States-Problem and Response**, ID-499, U.S. DOT, FHWA, 1986, 20pp.
- ___ **Improved Freeway Control System for Congestion Reduction**, ID-509, High Priority National Program Area (HPNPA), FHWA, January 1989, 4pp.
- ___ **Inductive Loop Detectors: Theory and Practice**, ID-519, 76-2 Implementation Package, USDOT, FHWA, January 1976.
- ___ **Information and Training Information Exchange**, ID-497, National Highway Institute, October 1982, 19pp.
- ___ **Information Resources**, ID-510, FHWA, High Priority National Program Area, 4pp.
- ___ **Kansas Rigid Pavements Serve Years Without ILL**, ID-514, Survey of urban concrete streets in Kansas reveals decades-long service life in many instances; low maintenance costs indicated, 3pp.
- ___ **National Review on the Management of the Highway Traffic Noise Program**, ID-487, FHWA, March 1985, 55pp.
- ___ **The Pennsylvania Transportation Institute, 1981 Annual Report**, ID-484, 45pp.
- ___ **The Pennsylvania Transportation Institute, 1980 Annual Report**, ID-485, The Pennsylvania State University, 38pp.
- ___ **Progress Report January 1978-The Transportation Center**, ID-481, The University of Tennessee, 62pp.

- ___ **Rail-Truck Intermodal Transportation Research, 1982**, ID-489, Transportation Research Board-National Research Council, 41pp.
- ___ **Recycled Asphalt Concrete**, ID-518, 76-2 Implementation Package, USDOT, FHWA, September 1975.
- ___ **Research Results Digest: Enforceability of the Requirement of Notice in Highway Construction Contracts**, ID-493, National Cooperation Highway Research Program, February 1986, 17pp.
- ___ **Research Results Digest: First Amendment Aspects of Control of Outdoor Advertising**, ID-494, Highway Construction Contracts, National Cooperative, Highway Research Program, 1985, 31pp.
- ___ **Road Paving Research**, ID-495, Helsinki University of Technology, 1978, 54pp.
- ___ **Road Surface's Reflectance-Influences Lighting Design**, ID-502, PCA, April 1986, 5pp.
- ___ **Solid Cement Pavement**, ID-506, PCA, 4pp.
- ___ **Solid Cement Recycle**, ID-505, PCA, 2pp.
- ___ **Steel Bridge Coatings**, ID-513, FHWA, HPNPA, January 1989, 6pp.
- ___ **Texas Transportation Institute Annual Report 1979**, ID-483, 24pp.
- ___ **Traffic Safety in Construction Zones**, ID-486, New Mexico State Highway and Transportation Department, February 1989.
- ___ **Transportation Center Summary of Progress**, ID-482, The University of Tennessee, January 1982, 64pp.
- ___ **Transportation Research Results**, ID-490, U.S. DOT, 59pp.
- ___ **Traverse Adjustment Computer Program: User's Manual**, ID-520, 76-2 Implementation Package, USDOT, FHWA, April 1976.
- ___ **Truck/Highway Safety**, ID-512, FHWA, HPNPA, January 1989, 4pp.
- ___ **UMTA University Research and Training Program-FY1985 Announcement**, ID-488U, U.S. DOT, August 1984, 40pp.
- ___ **A User's Manual for a Management Control System for Street Maintenance**, ID-517, FHWA, November 1977, 185pp.

These publications and videos may be borrowed for two weeks. If you wish to receive a copy of any of the above publications to keep, please contact Susan Earp at the Alaska Technology Transfer Program at 474-7733 to see if it can be obtained or if duplication is possible. Please print your name and address below, and mail to:

**Alaska Transportation Technology Transfer Program
 University of Alaska Fairbanks
 233 Duckering Building
 Fairbanks, AK 99775-0660**

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 Organization: _____ Address: _____
 City: _____ State: _____ Zip: _____ Phone: _____

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NEW VIDEOS AVAILABLE FOR LOAN

Number 19, 1989

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___ **The Best Defense Is A Good Road**, ID-110, USDOT/FHWA, 25min. Video supplemental, ID-667, The Best Defense Is A Good Road, Reducing Liability Through Good Risk Management, September.

___ **Breakaway Timber Utility Poles**, ID-109, DOT/FHWA, Insert supplemental included, 15min.

___ **Controlling Skids**, ID-106, Liberty Mutual Insurance Company, 11:41 min.

___ **Idea Store Edition III**, ID-112, PennDOT, 9:40 min.

___ **1989 IRWA Education Seminar**, ID-114U, Dearborn, Michigan. Hazardous Waste; ROW Training; Streamlining Acquisition.

___ **1989 IRWA Education Seminar**, ID-113U, Baltimore, Maryland. Hazardous Waste Acquisition - Appraiser Certification Legislation Update.

___ **Pavement Structure Repair Techniques (Tape 1)**, ID-104, Includes: Maintenance of Gravel Roads, 27 min; Ditch Maintenance, 17 min; Pothole Patching, 17:10 min; Crack Sealing, 15:48 min; Basic Traffic Control, 10:32 min, USDOT/FHWA, Video supplements available, refer to publications list ID-659-663, 88min.

___ **Pavement Structure Repair Techniques (Tape 2)**, ID-105, Includes: Shoulder Maintenance, 21:20 min; Asphalt Chip Seals, 21:33 min, USDOT/FHWA, Video supplements available, refer to publications list ID-664-665.

___ **Regraveling**, ID-108, International Road Federation, FHWA, 17:39min.

___ **Replenishing Earth and Gravel Shoulders**, ID-107, International Road Federation, FHWA, 18:32min.

___ **Understanding the Capabilities and Needs of Special Passengers**, ID-111U, KTU T2, 65 min.

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233 Duckering Building
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Alaskan Transportation Technology Transfer Program

Notes on Publications and Videos



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REQUEST FOR RESEARCH NEEDS STATEMENTS

In preparation for the selection and development of research projects to be conducted in FY91, the Department of Transportation and Public Facilities (DOT&PF) Statewide Research is soliciting Research Needs Statements. A Research Needs Statement is simply a brief statement describing a particular problem for which research may be able to provide a solution. **Statewide Research conducts practical research and development projects for the DOT&PF aimed at reducing costs and improving the usefulness and performance of highways, buildings, airports and marine transportation facilities. Needs Statements should be consistent with this mission.**

The DOT&PF Research Advisory Board will evaluate the Needs Statements and rank them in order of Department priorities. Statewide Research will then develop a Request for Proposals for research projects which address the suggested needs that are of the greatest importance to the DOT&PF. Proposals will be scored by Statewide Research and ranked by the Research Advisory Board. The top ranked proposals will be funded within the constraints of the Research Section's capital budget. No proprietary rights are attached to Needs Statements. Proposals addressing the top Needs Statements will be openly solicited. Conversely, there is no obligation for an individual to follow up a Needs Statement with a proposal should they not wish to be involved with a research project.

The research project development process described complies with the DOT&PF Professional Services Consultant Selection Policy and Procedures. It therefore allows immediate negotiation of contracts with private sector consultants, as well as other government agencies, to perform research on any project for which they submitted the top ranked proposal.

Please submit Research Needs Statements on one page using the format shown on the reverse side of this page. Use a separate form for each suggestion. Include your name and a daytime telephone number on the form so that we may contact you if clarification is required.

Statewide Research solicits and accepts Research Needs Statements year round, however, to be considered by the Research Advisory Board this year, they must be received at the Statewide Research office by close of business, Wednesday, February 28, 1990.

Mail forms to:

or

Deliver to:

DOT&PF Statewide Research
2301 Peger Road
Fairbanks, Alaska 99709

DOT&PF Statewide Research
Room 247, Duckering Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775

Contact Billy Connor, Research Manager at (907)474-2472 if you have questions.

USE THE FORM ON THE REVERSE SIDE OF THIS PAGE.

There is no restriction to the number of Needs Statements submitted by an individual. However, limit each to one page.

RESEARCH NEEDS STATEMENT

TITLE: (A short phrase which identifies the needs statement.)

STATEMENT: Briefly define the problem and explain its relevance to DOT&PF as described on the reverse side of this form. If you have a suggestion, present what you think might be done to solve it.

NAME:
POSITION
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ADDRESS:
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DATE SUBMITTED:

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DOT&PF Statewide Research
2301 Peger Road
Fairbanks, Alaska 99709

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Room 247, Duckering Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775

Contact Billy Connor, Research Manager at (907)474-2472 if you have questions.

For Statewide Research Use Only

Date Received:
Recommendation:

Date Acknowledged:

Number: