TECHNOLOGY FOR

Alaskan Transportation

Local Technical Assistance Program

Fall 1994
Vol. 19 No. 3

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This newsletter is funded by a grant from the Federal Highway Administration's Local Technical Assistance Program and the Alaska Department of Transportation and Public Facilities.

What's New? SMA!

Several new products are currently being tested for use across the United States by the Strategic Highway Research Program (SHRP). One of these products is knows as stone mastic asphalt (SMA). The product originated in Europe and is used quite extensively in Germany. European development of the product was for abrasion resistance under the wear of studded tires. Studded tires use was eliminated in all but Sweden, but the use of SMA continues. Europeans use SMA for abrasion resistance, noise reduction, and to resist rutting. This material is used on roads with an average daily traffic (ADT) over 15,000 that are subject to these problems.

Hot-Mix Asphalt

Stone Mastic Asphalt

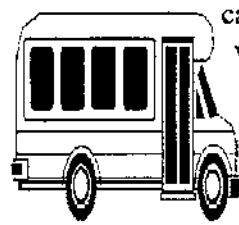
The theory of SMA optimizes stone on stone contact. Agand shape are used. As seen from the figure, the material has basically one size, roughly symmetrical stone which forms a skeleton for the mix. Thus, high internal friction is produced which will hinder deformation or rutting. The mastic material is also high in asphalt content (6 to 7 percent) that provides a more durable pavement. In Europe the material has proven to be more durable and less susceptible to

(continued on page 3)

SHRP Product Demonstration Van to Visit Alaska

Make Your Demo Reservations NOW!!

During the months of April and May 1995, personnel from the Region 10 office of the Federal Highway Administration (FHWA) will be in Alaska to conduct statewide demonstrations of the Strategic Highway Research Program (SHRP) Work Zone Safety Devices. The SHRP product demonstration van will be the platform for these traveling demonstrations. Products in the demonstration van will include the intrusion alarm, flashing stop/slow paddles, direction indication barricade, opposing traffic lane divider, portable crash cushion, portable rumble strip, and an all-terrain sign stand. These devices are being loaned to the FHWA so they can be showcased throughout the state. All of these products are listed in the recently published revised Part



(continued on page 4)

Better Roads Survey Results: Better Gravel Road Maintenance

The average county has 1345 lane miles of roads, according to a recent *Better Roads* survey. Of these, a third - just over 500 miles - are gravel.

Mowing, ditching, snow removal, and grading are the responsibilities of almost all of the work crews in the counties surveyed. Chemical vegetation control and dust control were completed by workers in most departments, survey results show.

Department-developed equipment and methods make gravel road maintenance easier in some counties. In Chambers County, Alabama, for instance, crews modified their herbicide spray unit to spray overhanging limbs. Use of herbicides keeps them under control, says County Engineer Charles Markert.

Dust control is a common problem. In Adams county, Washington, County Engineer Walt Olsen uses Lignin sulfonate on heavy truck haul areas. During dry months, his crews use rock rakes rather than motor patrols. These bring the gravel back to the surface and don't disturb base soils which flow easily. Valley County, Idaho also uses lignite according to Road Superintendent Duane Petersen.

In other counties, crews are experimenting with asphalt millings to control dust. This serves as a cover material helping keep fines in place.

Maintenance timing affects work, too. Regularly scheduled maintenance helps, according to many survey respondents. Regular inspection and maintenance makes gravel maintenance easier, says Tulsa County, Oklahoma, County Engineer Ray Jordan.

In Pontiac County, Mississippi, County Engineer James E. Akins keeps the same crew on the graders. In addition, use of crushed limestone rather than chalk-type gravel helps him keep enough gravel on the road during the rainy season, yet helps avoid dust problems in dry weather.

Many departments grade roads twice a month from late fall until late spring to avoid problems and complaints. In Troup County, Georgia, County Engineer Todd Hudson says the cost-cutting method he uses is to "cut back on scraping till the citizens complain."

Reprinted from "Better Roads" July, 1994.

News & Views

To Russia With . . .

The FHWA is recruiting highway and transportation professionals for short-term technical assistance assignments in Russia. Applicants must be U.S. citizens. Preference will be given those with Russian language skills. For more information contact Kevork Aglaganian, Office of International Programs, (202) 366-9629.

Reprinted from "Oregon Roads" Summer 1994

Hawaii this February

"HMA & NAPA--Meeting the Demands of Our Changing World" is the theme and Hilton Waikoloa Village Resort on the Big Island of Hawaii is the site for the 40th Annual Convention of the National Asphalt Pavement Association (NAPA), February 18-23, 1995.

Hot Mix Asphalt (HMA) producers and contractors from the U.S., Canada, and other countries around the world, will be on hand for the General Sessions featuring outstanding speakers addressing current industry issues. Concurrent workshop sessions will cover technical, managerial, marketing, and health and safety issues of interest in the industry.

A preliminary program and registration information for NAPA's 40th Annual Conventon is available by contacting:

Ms. Ladonna Burton
Nat'l Asphalt Pavement Assoc.
NAPA Building
5100 Forbes Blvd.
Lantham, MD 20706-4431
Phone: (301) 731-4748
Fax: (301) 731-4621

What's New? SMA!
(continued from page 1)

low temperature cracking. Studies are exploring the use of cellulose or polymer additives incorporated into the mix. These fillers help to prevent drain down (seepage of binder through base layers) of the asphalt binder during hauling and paving operations.

Existing plants and equipment are used to produce and lay the material. Higher mixing temperatures are necessary because of the coarser aggregates. Rolling takes place immediately after placement to achieve proper density. Compaction is accomplished using 3 steel wheeled rollers with minimum weights of 12 tons. Vibratory rollers can decompact the mix if not used properly. Use of rubber tires rollers in compaction is not recommended.

Twelve SMA research projects were constructed in the United States in 1992 with good results. These projects are being monitored to determine where to use the new material, what the limit on thickness will be, the advantages of the modifiers, and the best construction procedures. Construction of SMA is proceeding in several states.

In 1992, 3 SMA text sections were constructed on the new Seward Highway in Anchorage. The test sections consisted of 1000 tons each of:

1. SMA with AC-5 asphalt and polymer stabilizer (polyolefin),

2. SMA with AC-5 asphalt and cellulose stabilizer, and

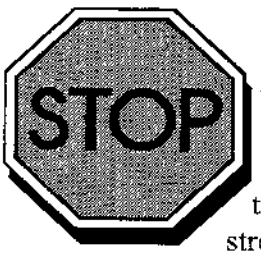
3. SMA with AC-20 asphalt and cellulose stabilizer.

Preliminary test results found the SMA test sections to have studded tire wear/rutting of 45 percent less than conventional asphalt concrete, type 1A.

In 1994, Muldoon Road in Anchorage was overlaid with 2" of SMA, using AC-5 asphalt cement and cellulose stabilizing addition. Two other SMA projects are under construction in 1994 and at least one is planned for 1995.

From "Moving Forward," by Ed Stellfox, April, 1993, adapted for Alaska with assistance from Scott Gartin, Materials Engineer, Statewide Materials Headquarters, Alaska Dept. of Transportation and Public Facilities.

Stop-Sign Warning Study Needs Your Help



Sometimes drivers approaching a stop sign incorrectly assume that the cross street traffic also has a stop sign. Drivers who mistakenly think they are at an "all-way stop" then pull out in front of oncoming traffic, and accidents result. In a number of locations across the country, traffic control personnel have resorted to installing variations of "CROSS TRAFFIC DOES NOT STOP" warning signs, either as a supplementary sign on the stop sign pole, or in advance of the stop sign.

A study under way at the University of Arkansas is attempting to determine how widespread the use of these signs is, what colors and words have been tried, and if any before-and-after studies of effectiveness of such signs have been made. If your jurisdiction uses these signs, please call (501) 575-7168, or write:

J.L. Gattis
Civil Engineering Department
4190 Bell Engineering Center
Fayetteville, AR 72701

Sixth International Conference On Low-Volume Roads

The Sixth International Conference on Low-Volume Roads will be held at the University of Minnesota, June 25-29, 1995. Registration is $150 (US) and should be made by January 1995. See the enclosed flyer for further information and registration form.

Traffic Directing Gorillas Retired

Several news items have appeared recently describing the mechanical gorillas directing traffic through work zones on Alaskan roads. These gorillas perched on barrels, wearing yellow hard hats, orange striped vests and yellow gloves, and held rotating, flashing stop-slow paddles to direct traffic on low volume roads.

It was hoped that the gorilla traffic directors might give folks a chuckle instead of a headache, and save some money for the state. Instead, the traffic directing gorillas have been retired because of potential liability problems. Traffic directing gorillas do not meet the requirements for flaggers set out in the Manual on Uniform Traffic Control Devices (MUTCD) and can not be used.

SHRP Product Demonstration Van
(continued from page 1)

VI of the *Manual on Uniform Traffic Control Devices* (MUTCD) titled, *Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility, and Incident Management Operations.*

The demonstrations will be of particular interest to state, municipal, and city personnel involved with traffic control for construction work and routine maintenance. These products are being made available to all Technology Transfer Programs in the United States and Puerto Rico. The Alaska T2 Program will be contacting agencies for interest in using these new products for testing. Those who are interested will have the opportunity to see these products during scheduled demonstrations.

The proposed route for the demonstration van is from Anchorage to Fairbanks on the George Parks Highway, then from Fairbanks to Valdez, on the Richardson Highway. The van will then return to Glennallen and travel the Glenn Highway back to Anchorage. It may also be possible to bring the demonstration van to Tok and/or the Kenai Peninsula if there is enough interest expressed from these locations.

We encourage all state and local government personnel interested in traffic control to attend one of these demonstrations. If you would like the demonstration van to stop in your area, or have questions regarding the van, contact Jim Bennett, T2 Program Engineer, at 451-5322. Jim will need information about your location and times that would be convenient for scheduling a demonstration in your area.

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Perma-zyme 1994
No. 33

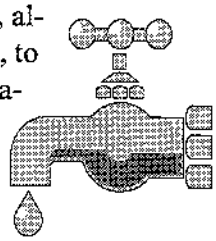
by Boyd J. Brownfield, P.E., Director, Maintenance & Operations, DOT&PF Central Region, Anchorage, Alaska

Picture this! It's spring, the subbase goo (pronounced "elephant dung") is boiling and oozing up through your gravel roads. They are all but impassable. The phone is ringing off the hook with some of the state's finest critics having relatively unkind things to say about your roads, your employees, your wife, your kids and your ancestors—and there's absolutely nothing that can be done about it. Sound familiar? Like the spring of '94?

ENTER - a new product called PERMA-ZYME. This stuff is supposed to stabilize some of the worst roads. It solidifies the very materials that you and I have been taught never to leave in a road bed: that elephant dung we traditionally find oozing out of our roads each spring, doing its best to make forward motion of any motor vehicle all but impossible.

Earlier this year I was asked by my boss, John Horn, Regional Director, Central Region to look into this product to see if it had any application in Alaska. That we did, and we found some pretty impressive results.

Perma-zyme is a liquid product which, when mixed with certain types of earth materials, alters the properties of those materials, to produce a solid, almost rock-hard material. It actually fuses them together to create a very dense and permanent base which resists water penetration, weathering and wear. AND, the process is no more difficult than watering, shaping/regrading and compacting the road bed as we now do to our non-paved roads each summer. There is, of course, one important exception. Under the present mode, the fruits of our labors generally last about two weeks, unless, of course, it rains, then we can count in terms of days. Perma-zyme, on the other hand, if applied correctly, lasts for years.



Sister states and county road commissions have had some of their roads last up to seven or eight years, at which time they end up chip sealing right over the existing road bed. I personally researched this product and talked at some length with DOT and County Road Officials from Pennsylvania, Idaho and Nevada. Without exception, they all rave about this product and have used it from four to about ten years.

Does this all sound too good to be true??? - WELL, it is and it isn't.

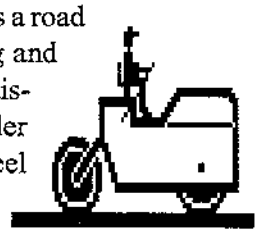
Let's take the "Too good to be true" first. Perma-zyme isn't the answer to every unstable road bed. It will not work on all kinds of soils in every instance. A road bed composed of purely silt, sand and gravel with no organic material, clay or cohesive materials characteristics will not react with this product. If your soil does not have the ability, when wetted, to stick together, it probably will not work with Perma-zyme. In fact, as a quick test, take a handful of your soil, wet it to an estimated optimum water content, and try to make a ball out of it. If it sluffs off and falls apart, forget Perma-zyme. It's too good to be true.

Now let's take the latter. Since there are several points to be made in favor I will number them.

(1) SOILS: If that mud ball generally holds together - much like a snow ball - and you get compaction and cohesiveness, chances are the soil will respond to Perma-zyme. Perma-zyme works best in soils having 18% to 30% passing the #200 sieve. *THAT'S RIGHT, 30% passing the #200 -that's the soil you and I were taught to dread and get rid of at all costs; the soil that principally causes the ugly breakups we (and the rest of the world) have each spring.* It will work with less the 30% passing this sieve; these percents render optimum results. Now for the "kicker". If your soil falls into the Too-Good-To-Be-True category , go find some elephant dung and mix it. Poof! - it changes categories.

(2) ROAD BUILDING: Perma-zyme is easy to apply and requires no special equipment or application procedures. It can be mixed with

a recycle machine right on the job site when sufficient "cohesive" fines are present or combined with appropriate imported fines when not present. The process requires a road grader for mixing, spreading and crowning, a water truck to dispense the mixture and a roller (wobbly wheel, vibrating steel drum, sheepsfoot, etc.) to compact the new surface.



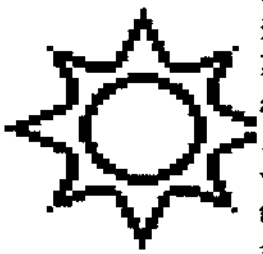
A typical operation would include:

Blade the existing bed to a depth of four to five inches and windrow any loose material. Unless the road lacks sufficient material or is of the wrong consistency, there is no need to bring more in. Remember, the soil must be of the "elephant dung" quality.

Add Perma-zyme to a tanker of water. The Perma-zyme comes in five gallon drums. It takes three drums to treat one mile of road, 25 feet wide, six inches deep.

Spray both the bladed surface and the windrow to obtain optimum moisture content. Blend the Perma-zyme mixture well into the soil with a blade or pulverizer. While it is not necessary, it is desirable to leave the mixture in a windrow along the side of the road overnight. This allows the Perma-zyme to be thoroughly blended.

Spread the windrows over the roadbed and blade the road to final crown. Compact with a sheepsfoot, Pneumatic or other type of compactor during the process. If the mixture gets too dry on a hot day during the process, apply a light mist of Perma-zyme and water (ratio of 1 to 1000) over the road. If a vibrator roller is used, use the vibrator only for the first and second pass. After that, turn it off so that fracturing will not occur. And there you have it. The road is ready for action using simple, straightforward common road building procedures.



(3) Cost: Perma-zyme costs $1000 per five gallon drum. It takes three drums to treat a road as noted above - $3000 per mile for a road (not counting labor and equipment and borrowed material, if necessary) that has the potential to last up to eight years. And that's using those poor materials you and I have cursed all these years. Now that's not half bad.

(4) Environmental Impacts: You can drink Perma-zyme (although there are better products on the market to quench one's thirst). You can feed it to your kids, animals, fish or vegetation and it will harm no one. Perma-zyme is biodegradable.

Now all this may sound too good to be true but it isn't. It is true!

We in the Central Region have already used it on several roads throughout our region. So far, the roads treated are extremely hard and stable. Even those stretches on which we didn't do a particularly good job of application. We are also applying it to a local gravel air strip. The real test, of course, will come next spring. I am both hopeful and confident, and will pass on the results in a future newsletter issue.

Should it prove successful, it will not only free precious manpower for other needed maintenance but I believe it will also revolutionize the way we deal with our gravel roads, as well as road beds for our major highways, slope stabilization and a host of other applications. If it doesn't work ------ well ------ I'M LEAVING DODGE!!!! Feel free to call me at 907/ 266-1735 if you have any questions.

Adapted from the "Alaska DOT&PF M&O Newsletter," Fall, 1994.

Editor's Note: Alaska T2 learned from Mr. Brownfield that Perma-zyme has potential as a dust control palliative. A cup added to 4,000 gallons of water and sprayed on a construction haul road in Anchorage decreased dust by about 75 percent.

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

Hard Drive Transfers

by Billy Connor

"Oh no! I just got a new computer and now I've got to move all my files over from my old one."

I can't count the number of times I've heard that remark. Understandably, if you've never faced this task, it is a bit scary. There are, however, a number of tricks to help you along.

First, if your old machine is configured exactly like you want, moving files is just a matter of backing up the old machine onto the new one. You can do this in a number of ways. The hardest way is backing all your files onto a stack of disks and then restoring them onto the new machine. What a pain! There are better ways.

A good method of transferring a large number of files is to physically connect the two machines using either their serial ports or their parallel ports. The serial port is the one you use to connect your modem or other devices. Most of the time, the printer is hooked to the parallel port. Your computer manual will show you which is which. Be careful though.

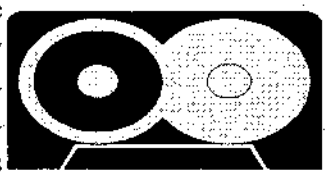
If you are transferring via the serial port, you must have the right type of serial cable. If you go buy one, look for a null modem cable. Most cables you buy are modem cables. That means that all the pins on one end are connected to the same pin on the other end. These are sometimes call straight through cables.

Null modem cables cross pins 2 and 3. That is: pin 2 on one end is connected to pin 3 on the other end and pin 3 is connected to pin 2. This is done because the standard RS232C (wiring) convention sets pin 2 as data receive and pin 3 as the data send lines. If both machines are talking on the same line, neither hears the other.

If you are using the parallel port, you must use a bidirectional parallel cable. Most of the parallel cables you see are bidirectional. This just mean that there are enough wires to allow data to pass in both directions.

There are several programs which help you in file transfers. Perhaps the most famous of these is LapLink. It works quite well. However, DOS 6.x also has Interlnk.exe which will allow data transfer between the machines. Make sure you read the manuals for both pieces of software before using them.

Another good way to transfer files from one machine to another is through a tape backup. If both machines have a tape backup, simply backup the old machine to the tape and restore it to the new machine. This is my favorite way because I easily restore only those files I want and still have copies of the remaining files, should they be needed. More about this later.



There are also tape drives which can be plugged into the parallel port. These are very handy in an office which does not put a backup system in the machine. Nonetheless, the idea is the same as with the internal tape backup. Just backup the old machine. Plug the tape drive into the new machine and restore.

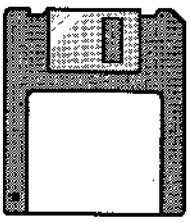
If you are on a network, you can backup your old machine onto the network and restore it onto your new machine. This works great.

Once, I took the hard drive out of the old machine and installed it in the new machine as

a second drive. All I had to do was clean up a bit. In that instance, I surplused the old machine. It wasn't worth keeping.

A word of caution. Take the time to clean up the old machine BEFORE you transfer the files. Replace corrupted files. Delete unused files and software. Consider reinstalling software, especially if it's not quite right.

So your machine came with software preloaded. What now? My last machine came with the hard drive two-thirds full of software. Most of it was of no value to me. So I just got rid of it. Don't feel bad about doing so. If you use it, leave it. If not, get rid of it. I would suggest you backup the machine before deleting files and before moving files over. That way, you protect yourself.



Let's say you have the latest version of EXCEL on both machines. Should you copy over the program from your old machine? Probably not. Unless you have heavily customized the software, it may be easier to just fix the configuration on the new machine. If the customization is extensive, copy only the configuration files. If you made the backup as suggested, then there should be no problem if you make a mistake.

All of the methods discussed allow moving only selected files from one machine to another. I suggest making a good backup of the old machine before letting it go. Save this backup until you are absolutely sure that the data on the backup is no longer needed. A year is not too long.

I have used all of the methods discussed above with success. As I alluded to earlier, tape backup is the easiest method. It allows you to move files over quickly and efficiently. It produces the archive file as a by-product of the transfer process. These backups invariably save the day down the line.

In summary, moving from one machine to another need not be dreaded. With a little planning and a little patience, you can move to your new machine in a few hours. My record is just under an hour. Most of that time was spent on other things while the computer did the work. If your office has a computer technician, solicit their help. If not, the computer vendor will usually give you advice.

For More Information

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1994/95 T2 CALENDAR OF EVENTS

DATE	EVENT	SPONSOR/CONTACT	LOCATION
Nov 29	Metric (SI) Training	Alaska T2 Program, (907) 451-5320	Fairbanks Princess Hotel, Fairbanks, Alaska
Nov 30	Metric (SI) Training	Alaska T2 Program, (907) 451-5320	Regal Alaskan Hotel, Anchorage, Alaska
Dec 1	Metric (SI) Training	Alaska T2 Program, (907) 451-5320	Westmark Baranof Hotel, Juneau, Alaska
Dec 1	How Not to Administer Construction Contracts	Wells & Bridges, Inc., (513) 237-0112 or (800) 232-9923	Fairview Recreation Center, Anchorage, Alaska
Dec 2	How Not to Administer Construction Contracts	Wells & Bridges, Inc., (513) 237-0112 or (800) 232-9923	Westmark Fairbanks Hotel, Fairbanks, Alaska
Jan 17-20, 1995	Systematic Development of Informed Consent (SDIC)	Alaska T2 Program, (907) 451-5320	Sheraton Anchorage Hotel, Anchorage, Alaska
Feb 21-24, 1995	AASHTO-FHWA National Metric Conference	AASHTO, FHWA, Arizona DOT. Thomas L. Burh, Jr., Fax: (602) 407-3220	Phoenix, Arizona
Apr 5-7, 1995	1st Nat'l Conference & Exhibition on Access, Safety, and Liability under ADA	TD Safety Report Newsletter, (202) 737-4650	Orlando Marriott Hotel, Orlando, Florida
Apr 25-28	Citizen Participation by Objectives (CPO)	Alaska T2 Program, (907) 451-5320	Sheraton Anchorage Hotel, Anchorage, Alaska

Meetings Around Alaska

Society	Chapter	Meetings Days	Location
ASCE	Anchorage Fairbanks Juneau	Monthly, 3rd Tues., noon Monthly, 3rd Fri., noon Monthly, 1st Wed., noon*	Northern Lights Inn Captain Bartlett Inn Breakwater Inn * except June-August
ASPE	Fairbanks	Monthly, 1st Fri., noon	Captain Bartlett Inn
ASPLS	Anchorage Fairbanks Mat-Su Valley	Monthly, 3rd, Tues., noon Monthly, 4th Tues., noon Monthly, last Wed., noon	Executive Cafeteria Federal Building Ethel's Sunset Inn Windbreak Cafe; George Strother, 745-9810
ITE	Anchorage	Monthly, 4th Thurs., noon	Sourdough Mining Company
IRWA	Sourdough Ch. 49 Arctic Trails Ch. 71 Totem Ch. 71	Monthly, 3rd Thurs., noon** Monthly, 2nd Thurs., noon# Monthly, 1st Wed., noon	West Coast Internat'l Inn **except July & Dec. Captain Bartlett Inn #except December Mike's Place, Douglas
ICBO	Northern Chapter	Monthly, 1st Wed., noon	Zach's, Sophie Station
AWRA	Northern Region	Monthly, 3rd Wed., noon Brown Bag Lunch	Room 531 Duckering Bldg., University of Alaska Fairbanks, Larry Hinzman, 474-7331

To publicize an event in our calendar, contact us at (907) 451-5320.

Who's Who in Alaska's Transportation

Jim Swing, Public Works Director,
Matanuska-Susitna Borough, Palmer, Alaska

Jim Swing was born in Renssilaer, Indiana and grew up on an Indiana corn, soybean and pig farm. After graduation from high school he enrolled in Civil Engineering at Purdue University, graduating with a Bachelor of Science degree in 1960. He entered the U.S. Army in 1961 and spent three years working in Arctic research for the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire. During this tour with CRREL, he participated in field research work in Greenland, Alaska, Michigan, and Puerto Rico. One of these field trips was his first exposure to Alaska, where he assisted in researching the identification of permafrost by means of various aerial photo methods. The summer was spent in Fairbanks, Barrow, and Northway.

After discharge from the U.S. Army in 1964, Jim worked for the Colorado Highway Department in Glenwood Springs as a project engineer on construction of the interstate highway through Glenwood

Canyon. In January, 1965 he accepted a job with the State of Alaska, Division of Aviation, in Anchorage. He was assigned to the Secondary Airport Section, designing and administering construction of airports in villages throughout bush Alaska. In 1968 he accepted a position with a consulting engineering firm in Spokane, Washington and worked at that location until 1972, when he returned to Alaska to accept a position as manager of the newly formed sewer utility for the Greater Anchorage Area Borough (GAAB). He served in that position until he was named Director of Public Works for the

GAAB. Upon unification of the Borough and the City of Anchorage, he was appointed Director of Public Works for the Municipality of Anchorage (MOA), serving in that job until 1979.

After leaving MOA, Jim managed the Alaska operations of a large national consulting engineering firm, USR Consultants. During the 11 years he managed this firm, several large projects were completed, including the design of both the Eklutna and Ship Creek Water Treatment Plants in Anchorage; the planning and design of South Cushman Street and University Avenue in Fairbanks; the design and construction administration of water and sewer extensions in Kodiak; and the planning and design of highway, water, sewer, and buildings projects throughout Southeastern Alaska.

In April, 1993 Jim accepted his current position of Public Works Director for the Matanuska-Susitna Borough in Palmer.

Mr. Swing has been active in the American Public Works Association, serving as both President and National Director for the Alaska Chapter; as National Director for the Water Pollution Control Association; as President of the Consulting Engineers Association; and as an Advisory Board Member for the Alaska T2 Program.

ENGINEER'S WEEK

February 19-26, 1995

Fairbanks Events Contact:
Bert Bell, Ghemm Company
452-5191

Anchorage Events Contact:
Ed Riggs, USKH
276-4245

Juneau Events Contact:
Lance Mearig, USKH
790-2901

METRICATION IN CENTRAL REGION

by Dan Rice, P.E., Regional Metric Coordinator, Professional Services and Claims, Department of Transportation and Public Facilities, Anchorage, Alaska

Metrication in Central Region is HAPPENING! All Regional Highway Design projects anticipated to be advertised after the September 30, 1996 deadline are being developed in metric. Currently, this encompasses sixteen highway design projects. Project Manager discretion is allowed for determining whether Highway Design projects will be developed in English or Metric if they will be advertised prior to September 30, 1996.

Regional development of base sheets for metric plan sets, drafting guidelines and manual, surveying standards, and boilerplate language for Professional Service Agreements is complete. Metric standard specifications for highway construction and conversion factors developed by Headquarters are being incorporated into metric projects. Coordination is ongoing so our Graphics section can reproduce metric plan sheets.

* Paper sizes in Central Region have been converted to International Standards Organization (ISO) "A Series" paper sizes (A1, A2 & A3) for all new plan sheets.

- Only minor additional effort is required to cut A1, A2 and A3 paper from existing roll stock.

- The exception has been incorporating A4 (metric equivalent of 8.5 x 11 inch) paper. Currently federal agencies in Alaska have not required or implemented A4 paper into their daily operations. Central Region has deferred incorporating A4 paper until such time as FHWA and other federal agencies require suppliers in Alaska to begin stocking A4 paper. Once the federal government requires this paper size to be incorporated into their own daily work and it becomes readily available, then Central Region will take the necessary conversion steps to incorporate this new size as well.

* A Metric Drafting Manual is now in the final draft review stage.

* Autocad Standards have been revised. Our Standards Committee continues to address metric issues as they arise. Once the metric drafting manual is adopted copies will be made available to Consultants.

* Surveying Standards conversion to metric is basically complete.

* A Construction Surveying Manual has been adopted and is now available to Contractors.

* Regional Right of Way standards are revised to metric. They are now capable of providing both English and Metric drawings.

* Boilerplate Language for Professional Service Agreements has been reviewed and is now being incorporated into **all** new contracts. The new language requires all construction activities be performed in metric.

Aviation Design

At this time, the majority of all metric conversion activities have been directed towards highway projects, including marine highways. When guidance is received from the Federal Aviation Administration (FAA) on their metric conversion requirements, we will undertake such conversion activities as are necessary.

* Aviation Design's 1995 fiscal program will develop only English designed projects.

* However, Aviation Design is moving forward to be ready when the FAA does establish a target date.

- Aviation Design has developed a metric drafting manual.

- Survey data on two projects with expected Authority to Advertise dates later than 1996 are being produced in metric.

Training

Training has been on-going and primarily through Technology Transfer (T2) Program courses. Once standards and manuals are adopted and additional funding becomes available, a more extensive program will be established in Central Region for our personnel and the general public.

Metrication in Central Region has been a subtle effort similar to what has been occurring in the American economy. As Central Region continues to be exposed to the metric system through the design process, design personnel appear to be more receptive to the switch. As we purchase our liter bottles of beverages, use metric tools to work on American automobiles with liter sized engines, purchase canned goods with weight notated in grams, run 100 m, 400 m, 5 km, 10 km races, we start recognizing how much metrication is already ingrained in our society. Efforts to meet the September 30, 1996 target date are in full force and Central Region will continue moving forward with conversion activities and will strive to make the transition period an orderly and quick one.

For further information on metrication within Central Region, contact Dan Rice at (907) 266-1520 between 7:30 - 11:30 a.m. and 12:30 - 4:00 p.m. or by fax at (907) 248-9681.

Metrication Moving Forward
But Signs On Hold
FHWA Clarifies Metric Restrictions

The Congress passed legislation last year (Section 331 of the 1993 appropriations bill) prohibiting the use of federal funds for metric signing. The FHWA has issued a memorandum to provide guidance on this issue.

The memo, dated November 23, 1993, explains that Section 331 does not restrict the design, construction, and erection of new signs, or the modification of existing signs to metric specifications. The restriction is in effect only when signs involve the display of metric units of measure, such as speed limit, distance, etc. Since the funding restriction applies to federal funds made available during fiscal year 1994, there is still a need for a metric sign implementation policy to assure uniform metric units and practices.

The FHWA further stresses to the states and others that the one-year moratorium on federal funding of metric signs should not affect the progress the FHWA and the states are making in other areas of the program. The FHWA will still be requiring metric Proposed Specifications and Estimates by October 1, 1996, and they will continue to modify the Manual of Uniform Traffic Control Devices to incorporate metric units in the 1996 edition.

It is not yet known whether Congress will extend the prohibition. A bill to again prohibit metric sign funding is pending. We will continue to monitor this issue and keep our readers advised of any changes or developments.

Reprinted from "ATSSA Signal," March, 1994.

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

NEW PUBLICATIONS AVAILABLE FOR LOAN 1994

No. 36

Place a check by the publications you wish to borrow.

____ **Advanced Public Transportation Systems: The State of the Art Update '94**, ID-1261, U.S. DOT, DOT-T-94-09, Office of Technical Assistance and Safety, Advanced Public Transportation Systems Program: A Component of the Departmental IVHS Initiative, January 1994, 133pp.

____ **Advanced Public Transportation Systems: Evaluation Guidelines**, ID-1260, U.S. DOT, DOT-T-94-10, Office of Technical Assistance and Safety, Advanced Public Transportation Systems Program: A Component of the Departmental IVHS Initiative, January 1994, 312pp.

____ **The Application of Small Nuclear Magnetic Resonance Spectrometers to Quality Control Measurements of Asphalt and Asphalt-Aggregate Mixes**, ID-1274, SHRP-A-382, Strategic Highway Research Program, National Research Council, February 1994, 42pp.

____ **Conceptual Plan for an Interactive Highway Safety Design Model**, ID-1258, U.S. DOT/FHWA, FHWA-RD-93-122, February 1994, 134pp.

____ **Conference Proceedings I: Third International Conference on Managing Pavements Volume 1**, ID-1277, Transportation Research Board, National Research Council, San Antonio, TX, May 22-26, 1994, 277pp.

____ **Conference Proceedings I: Third International Conference on Managing Pavements Volume 2**, ID-1278, Transportation Research Board, National Research Council, San Antonio, TX, May 22-26, 1994, 341pp.

____ **Development of Criteria for Design, Placement and Spacing of Rumble Strips**, ID-1267, Ohio Department of Transportation, FHWA/OH-93-022, October 1993, 128pp.

____ **Guidelines for Timing Contraction Joint Sawing and Earliest Loading for Concrete Pavements, Volume I: Final Report**, ID-1269, U.S. DOT/FHWA, FHWA-RD-91-079, February 1994, 292pp.

____ **Highway Research Abstracts**, ID-1264, Volume 26, Number 1, Transportation Research Board, National Research Council, Spring 1993, 394pp.

____ **Highway Research Abstracts**, ID-1265, Volume 26, Number 2, Transportation Research Board, National Research Council, Summer 1993, 328pp.

____ **The Impact of Snow Properties on the Performance of Rotary Snowblowers**, ID-1268, Alaska Department of Transportation, June 15, 1993, 105pp.

____ **Integrated Model of the Climatic Effects on Pavements**, ID-1253, U.S. DOT/FHWA, FHWA-RD-90-033, November 1993, 304pp.

____ **Intelligent Vehicle Highway Systems Projects**, ID-1279, Department of Transportation, March 1994, 331pp.

____ **Intelligent Vehicle Highway Systems**, ID-1256, U.S. Department of Transportation, FHWA-SA-94-050, brochure.

____ **An Investigation of Load Transfer in Multi-Beam Prestressed Box Girder Bridges**, ID-1266, Ohio Department of Transportation, FHWA/OH-94/002, September 1993, 109pp.

ID-1280, Transportation Research Board 1426, Transportation Research Board, National Research Council, 1993, 80pp.

____ **Methodology for Optimizing Signal Timing: M O S T Volume 5 - WHICH Users Guide**, ID-1262,

Transportation Research Center, University of Florida, December 1991, 130pp.

____ **Practical Conflict Management Skills to Resolve Highway/Wetland Issues**, ID-1263, U.S. DOT/ FHWA, FHWA-HI-93-016, NHI Course No. 14231 Participant Notebook, January 1993, 160pp.

____ **Professional Development of Maintenance Engineers and Managers**, ID-1269, National Cooperative Highway Research Program, NCHRP Report 360, Transportation Research Board, National Research Council, 1994, 52pp.

____ **Ramp Signing for Trucks**, ID-1252, U.S. DOT/FHWA, FHWA-RD-91-042, March 1993, 120pp.

____ **Research and Technology Program 1994-1998**, ID-1257, U.S. DOT/FHWA, January 1994, 64pp.

____ **Roadside Safety Features and Landscape and Environmental Design**, ID-1276, Transportation Research Record 1419, Transportation Research Board, National Research Council, 1993, 133pp.

____ **SHRP-LTPP Specific Pavement Studies: Five-Year Report**, ID-1270, SHRP-P-395, Strategic Highway Research Program, National Research Council, April 1994, 164pp.

____ **SHRP-LTPP Traffic Data Collection and Analysis: Five-Year Report**, ID-1273, SHRP-P-386, Strategic Highway Research Program, National Research Council, March 1994, 39pp.

____ **SHRP-LTPP General Pavement Studies: Five-Year Report**, ID-1272, SHRP-P-387, Strategic Highway Research Program, National Research Council, March 1994, 79pp.

____ **Stiffness of Asphalt-Aggregate Mixes**, ID-1271, SHRP-A-388, Strategic Highway Research Program, National Research Council, April 1994, 101pp.

____ **The SUPERPAVE Mix Design System Manual of Specifications, Test Methods, and Practices**, SHRP-A-379, ID-1275, Strategic Highway Research Program, National Research Council, March 1994, 253pp.

____ **Tap into RTAP**, ID-1254, A Rural Transit Assistance Program of the Federal Transit Administration, U.S. DOT/FTA, information notebook.

____ **Training Resources Catalog For Rural and Specialized Transit Systems**, ID-1255, U.S. DOT/ FTA, A Rural Transit Assistance Program of the Federal Transit Administration, 1994, 293pp.

____ **Truck Accident Countermeasures on Urban Freeways**, ID-1259, U.S. DOT/FHWA, FHWA-RD-92-059, May 1994, 102pp.

These publications may be borrowed for three weeks. However, if you need the materials longer, just contact our office for an extension. Questions? Contact Susan Earp at Alaska T2 Program at (907) 451-5320 or TDD: (907) 451-2363.

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Department of Transportation and Public Facilities
2301 Peger Road M/S 2550
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Fax: (907) 451-2313

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____ **Alkali-Silica Testing**, ID-276, Strategic Highway Research Program, June 1994, 20 mins.

____ **Asphalt Maintenance Techniques**, ID-271, Video University Productions, Missouri, 1992, 85 mins.

____ **Batch Plant Maintenance**, ID-266, Video University Productions, Missouri, 1992, 60 mins.

____ **Bridge Deck Overlays**, ID-275, Strategic Highway Research Program, June 1994, 19 mins.

____ **Concrete Pavement Overlays**, ID-281, Strategic Highway Research Program, June 1994, 22 mins.

____ **Drum Mixer Plant Maintenance**, ID-265, Video University Productions, Missouri, 1992, 60 mins.

____ **Early Opening of Full-Depth Concrete Repairs**, ID-280, Strategic Highway Research Program, June 1994, 25 mins.

____ **Freeze-Thaw Testing**, ID-279, Strategic Highway Research Program, June 1994, 25 mins.

____ **Full-Depth Repair of Jointed Concrete Pavement**, ID-278, Strategic Highway Research Program, June 1994, 18 mins.

____ **Here's How A Hot Mix Plant Works**, ID-268, Video University Productions, Missouri, 1992, 55 mins.

____ **How To Prevent Segregation**, ID-267, Video University Productions, Missouri, 1992, 26 mins.

____ **Introduction to Rehabilitation of Highway Concrete**, ID-277, Strategic Highway Research Program, June 1994, 10 mins.

____ **New Work Zone Safety Devices**, ID-273, Strategic Highway Research Program, 1994, 17 mins.

____ **Partial-Depth Repair of Concrete Pavement**, ID-282, Strategic Highway Research Program, June 1994, 15 mins.

____ **Plows of the Future**, ID-274, Strategic Highway Research Program, 1994, 8 mins.

____ **Selective Pavement Rehabilitation**, ID-272, Video University Productions, Missouri, 1992, 34 mins.

____ **Special Hot Mixes SMA-ATPB-Rubberized**, ID-270, Video University Productions, Missouri, 1992, 46 mins.

____ **Thermal and Asphalt Cold Mix Treatment of Hydrocarbon Contaiminated Soil**, ID-269, Video University Productions, Missouri, 1992, 59 mins.

ADDITIONAL PUBLICATIONS AVAILABLE FOR LOAN

Place a check by the publications you wish to borrow.

____ **Anti-Icing Study: Controlled Chemical Treatments**, ID-1289, SHRP-H-683, Strategic Highway Research Program, National Research Council, April 1994, 145pp.

____ **Asphalt Concrete Mixtures**, ID-1284, Transportation Research Record 1417, Transportation Research Board, National Research Council, 1993, 186pp.

____ **Civil Engineering Careers: A User's Guide for Awareness, Retention, and Curriculum Programs**, ID-1287, NCHRP Report 347-Part II, National Cooperative Highway Research Program, Transportation Research Board, National Research Council, 1994, 107pp.

____ **Development of SHRP Asphalt Research Program Climatic Databases**, ID-1291, SHRP-A-685, Strategic Highway Research Program, National Research Council, April 1994, 65pp.

____ **Early Analyses of LTPP General Pavement Studies Data: Data Processing and Evaluation**, ID-1290, SHRP-P-684, Strategic Highway Research Program, National Research Council, May 1994, 264pp.

____ **Environmental Issues Related to Materials and Stabilization**, ID-1286, Transportation Research Record, National Research Council, 1993, 49pp.

____ **Fatigue Response of Asphalt-Aggregate Mixes**, ID-1292, SHRP-A-404, Strategic Highway Research Program, National Research Council, June 1994, 309pp.

____ **Field Performance of Subsurface Drainage**, ID-1281, Transportation Research Record 1425, Transportation Research Board, National Research Council, 1993, 63pp.

____ **Field Performance of Structures and Nondestructive Evaluation of Subsurface Infrastructure**, ID-1283, Transportation Research Record 1415, Transportation Research Record, National Research Council, 1993, 103pp.

____ **Innovations in Travel Survey Methods**, ID-1282, Transportation Research Record 1412, Transportation Research Board, National Research Council, 1993, 94pp.

____ **Keller's Official OSHA Safety Handbook**, ID-1288, J.J. Keller & Associates, Inc., 1994, 218pp.

____ **Low-Temperature Cracking: Field Validation of the Thermal Street Restrained Specimen Test**, ID-1295, SHRP-A-401, Strategic Highway Research Program, National Research Council, June 1994, 116pp.

____ **Low-Temperature Cracking: Test Selection**, ID-1294, SHRP-A-400, Strategic Highway Research Program, National Research Council, June 1994, 106pp.

____ **Performance-Related Testing and Evaluation of Characteristics of Aggregates and New Geomaterials**, ID-1285, Transportation Research Record 1418, Transportation Research Board, National Research Council, 1993, 66pp.

____ **Stage 1 Validation of the Relationship Between Asphalt Properties and Asphalt-Aggregate Mix Performance**, ID-1293, SHRP-A-398, Strategic Highway Research Program, National Research Council, June 1994, 235pp.

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ANNOUNCEMENT

SIXTH INTERNATIONAL CONFERENCE ON LOW-VOLUME ROADS

The Sixth International Conference on Low-Volume Roads will be held at the University of Minnesota, June 25-29, 1995. This conference is organized and conducted by the Transportation Research Board (TRB). The Center for Transportation Studies at the University of Minnesota will host the conference, and will be joined by an international co-host team, including the Finnish National Road Administration, the Transportation Association of Canada, and the Minnesota Department of Transportation. The conference is being cosponsored by the Federal Highway Administration, the USDA Forest Service and Agricultural Marketing Service, the Bureau of Indian Affairs, and Kuwait Fund for Arab Economic Development.

A registration fee of approximately (US) $150 will apply to all who attend. The preliminary program with complete information on registration and accommodations will be mailed in January 1995. If interested in receiving this information **please complete the form below and mail it to:** G.P. Jayaprakash, Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, DC 20418 USA.

The Conference Steering Committee has made a preliminary selection of papers based on a review of about 200 synopses. All selected papers, according to the TRB policy, are being peer reviewed which will determine the papers that will be included in the conference program. The preliminary selection includes papers from 18 countries and indicates tentative sessions related to the following aspects of low-volume roads:

- Planning Tools, Low-Volume Road Networks and Systems for their Management and Evaluation, and Environmental Assessment and Management
- Materials, Construction, Stabilization, Surfacing, Pavements, Waste, Materials, Bridges, and Design Guides
- Technology Transfer, Maintenance Operations, Traffic Operations and Safety

Many conference sessions will focus on low-volume road problems in cold weather climates. Another highlight of this conference is a field trip that includes a visit to the Minnesota Road Research Project (MN/Road) and other low-volume road sites.

----------CUT HERE----------

SIXTH INTERNATIONAL CONFERENCE ON LOW-VOLUME ROADS

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