LTAP Quarterly Newsletter

Montana State University
Bozeman, MT 59717-3900
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January, February, March 2000 **Vol. 18, No. 1**

"You Show Us How"

This contest was announced in our July, August, September newsletter. Contest winners from Montana and North Dakota are printed here because of requests for information in these areas. If you would like copies of the other state winners please call the LTAP office.

Montana State Winner
Jerry Otto, Hill County

Problem

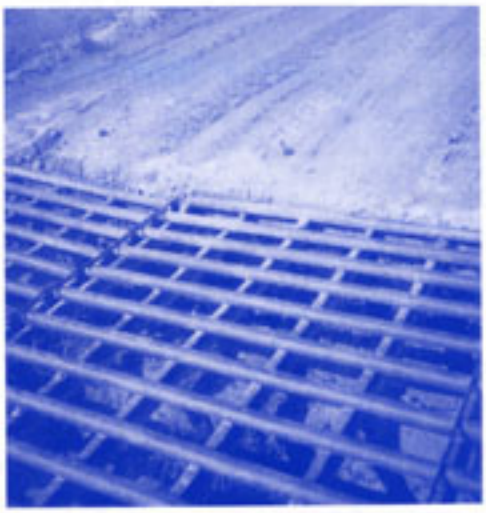
Cattleguards are difficult to place properly, and approaches are difficult to maintain. When placed improperly, material drifts into guards and approaches are uneven.

Discussion

We needed something solid to put our guards on. There was also the need for something to blade gravel onto to improve the approach ramps. To keep from undercutting our support wall during cleaning, we needed some kind of floor in our guards. Our standard guard is 24 feet wide. We needed removable gate posts for 30 feet wide combine header.

Labor, Materials and Costs

We built a set of wooden forms that could be set up, poured and taken down to be moved to other sites. We went out to bid on a standard 8' x 12' guard that was to be built on an 8" channel, 16" centers with 4" channels. Now we had a uniform guard we could use as needed.



We set our forms with a 9.5" drop on a 23" ledge. The forms were set 8'2" apart leaving room for easy removal of guards. This leaves a 74" x 26' floor for easy clean out with a bobcat or

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inside this issue

Garfield County Road Review

By Sam Gianfrancisco, LTAP

In November, Garfield County Commissioners requested LTAP's services to examine the gravel roads in their county and provide suggestions on maintenance. They also wanted assistance on setting road policies. Sam Gianfrancisco met with the Commissioners on November 7th-8th and drove on a large portion of Garfield County's roads. In general, the roads were in good shape. Several suggestions were made. An improvement which would enhance safety for drivers would be to allow consistent roadways with safe clearzones. AASHTO standards for low volume roads recommends that a ten foot clearzone be established on each side of the road to prevent errant vehicles from colliding with fixed objects. This would also prevent motorists from migrating to the center of the road to avoid roadside friction. No obstructions such as gravel or dirt berms should be left in this area. Maintaining consistent edges would also enhance driver safety. Edges must be parallel to the centerline and of uniform elevation. A more consistent surface of the roadway will encourage better driving habits and a safer roadway. Signing on roadways must be consistent and based on the standards in the MUTCD.

Some suggestions were given to the Commissioners on setting up a road policy. A copy of the road policy manual of Gallatin County was provided to Garfield County to help them in establishing road policy. If your county is in need of some on-site technical assistance concerning roads, please contact the LTAP office.

***LTAP Quarterly Newsletter* is published by the Local Technical Assistance Program at Montana State University-Bozeman.**

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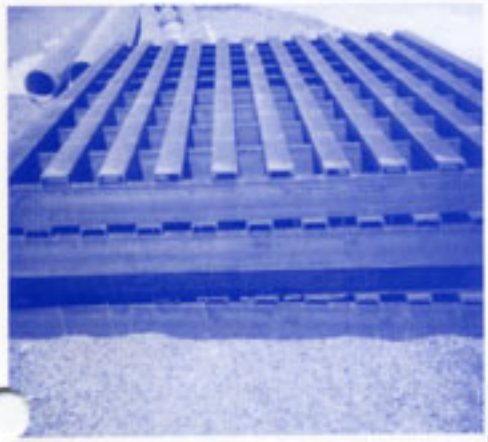
"You Show Us How" Continued

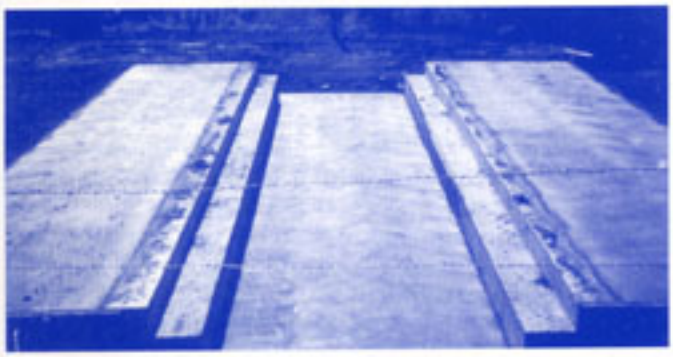
a similar machine. We also left a 6" x 4" ledge on the back side of our backwall form to set a 6 'x 24'x 6" deep approach ramp on each side.

Landowner(s) buy steel guards

14 yds concrete @ $75.00/yd. =	$1,050.00
Rebar - 30 pieces	88.20
10 hrs Backhoe	165.00
Labor - 120 hrs	1,840.00
County Cost	$3,143.20



Cost savings by eliminating the cost of cleaning every two years is $443.70. The operator can deposit gravel on the ramp and back drag it off, making a smooth approach ramp, saving time. This method also creates a smooth



crossing with minimum maintenance, and improves the safety value significantly.

We installed our first re-designed cattleguard six years ago and today it looks as good as the day we finished it with a small amount of gravel on the floor.

Name Our Newsletter

The Local Technical Assistance Program is renaming the Quarterly Newsletter and would like to hear your ideas. Please take into consideration the type of services we offer and the information that we convey. The winner of the contest will receive a LTAP Wearguard, fleece lined, all purpose jacket. The deadline for entries is March 1, 2000. Please fax or mail* your ideas to:

LTAP
Montana State University-Bozeman
P.O. Box 173910
Bozeman, MT 59717-3910

(406) 994-1697 (fax)

*only mailed and faxed entries will be accepted. Please, no telephone calls.

Correction

In the October/November/December 1999 edition of the LTAP Quarterly Newsletter we reported the incorrect results of the 10th Annual Snow Rodeo. We apologize for this mistake. The following are the 1999 winners for their respective events.

All Around Champion
Doug Nisbet, Lewis and Clark County

Snow Plow Competition
Doug Nisbet, Lewis and Clark County

Frontend Loader
Wayne Waarvik, Valley County

Motorgrader
Bob Moats, Yellowstone County

Backhoe
Shane Surber, City of Bozeman

"You Show Us How"

North Dakota State Winner
Larry Halvorson, Towner County

Problem Statement

Most of the roads in the county are gravel surfaced. Extreme care must be exercised when removing snow from the roadway in order that the gravel surfacing is not removed along with the snow. It is costly to resurface gravel roads, and therefore we don't want to waste more material in the ditches. If the snow plow blade elevation can be better controlled to eliminate any "bounce" of the blade less material will be lost in the process.

These one way plows are used on the motor grader when snow depths are minimal and the V plows are not necessary.

Solution

We designed and built rubber tired wheels to mount on the plow. The plow is supported on each end with 15 inch wheels. Initially we used smaller wheels, however we had trouble with the bearing not holding up as well as many tire problems and therefore switched to the larger wheels which seem to hold up well.

We salvaged the wheel swivels from old farm drills which we could locate in the area. Used radial tires are available at a low cost. Our operators built the framework for attaching to the plow.

The operators indicate this is much superior to the other plows without wheels or those with small wheels. They are better able to hold up their speeds on the grader, reach out further with the blade and as such able to throw the snow further.

Labor, Materials and Costs

Material for this was mostly salvaged. Obtained at minimum cost, used tires and wheels are available locally. The drill swivels were available from local farmers. Metal framework was available around the shop.

The operators constructed this on the plows when other work wasn't urgent. After designing and constructing the first one the others were installed in about one days time each.

Savings/Benefits

The operators feel they can do a better job with this system. There is less repair work necessary as compared to the smaller wheels. Also, they feel they can operate at a higher speed with these plows, thereby doing a better job of distributing the snow into the ditch.

Photos Courtesy of Vern Munger North Dakota TTT Center (Transportation Technology Transfer)

2000 Calendar of Events

Winter Travel	On request January-February
Train the Trainer Flagger Certification	**February 24**, Helena
Work Zone Flagging (Teleconference)	**March 8**, Glasgow, Glendive, Bozeman, Billings, Butte, Havre, Kalispell, Miles City, Missoula, Dillon, Great Falls, Helena
Forest Service Training	**March 13-17**, Missoula, MT
Work Zone Traffic Control	**March 27**, Bozeman, MT **March 28**, Butte, MT **March 29**, Helena, MT **March 30**, Great Falls, MT **March 31**, Missoula, MT
Gravel Roads Part II, Back to the Basics	**April 11-12**, Fort Benton, MT **April 13-14**, Great Falls, MT **May 3-4**, Columbus, MT **June 8-9**, Ennis, MT **June 22-23**, Helena, MT
MACRS Annual Conference	**April 4-7**, Havre, MT
Maintenance of Unpaved Roads Near Wetlands	**April 5**, Havre, MT
Safety Management	**June 15**, Great Falls, MT **July 13**, Missoula, MT **August 10**, Billings, MT
Leadership/Crew Supervision	On Request August-September
11th Annual Equipment Operator Training Workshop	**September 6-8**, Great Falls, MT
Montana Association of County Officials (MACo)	**September 24-27**, Havre, MT
Montana League of Cities and Towns Annual Conference	**October 4-6**, Missoula, MT
FHWA Region 8 County Road Advisor's Conference	**October 25-26**, Rapid City, SD
APWA Satellite Teleconferences	To Be Announced

New Publications and Software

Publications

p-765* **Summary of Evaluation Findings for the Testing of Ice Ban** – Describes a comprehensive laboratory and field evaluation designed to determine the effectiveness of Ice Ban anti-icing/deicing products in snow removal and ice control operations.

p-555* **Evaluation of the SSL MSE PLUS Retaining Wall System** – Describes evaluation of the SSL MSE Plus retaining wall system, a mechanically stabilized earth (MSE) structure, based on data submitted by the developers, designer and supplier.

p-2001* **Use of Guardrail on Low-Volume Roads According to Safety and Cost Effectiveness** – The objective of this study was to develop guidelines for the use of guardrail on low-volume roads (LVR) in Kansas according to safety and cost effectiveness.

p-1008* **Object Markers on Narrow Bridges on Low- Volume Rural Roadways** – Based on the results of the literature review, the surveys of current practices and the

Continued on Page 6

New Publications and Software Continued

field observations, several alternative signing strategies for low volume bridges were formulated. Must also consider safety of road users.

p-353 **LTPP Pavement Maintenance Materials: SPS-4 Supplemental Joint Seal Experiment, Final Report** – Documents the entire SPS-4 supplemental joint seal study, including the installation of 29 unique joint seal treatments, the laboratory testing of experimental sealant materials, and the multi-year performance monitoring of the various joint seal treatments. It also discusses the results of comprehensive statistical analysis conducted on sealant material performance.

p-354 **LTPP Pavement Maintenance Materials: PCC Partial-Depth Spall Repair Experiment, Final Report** – Documents the entire Portland Cement Concrete (PCC) partial-depth spall repair study, including the installation of 30 unique repair types (i.e., combinations of patching material and patching method) at 4 different test sites, the laboratory testing of experimental repair materials, and the 7-year performance monitoring of the various partial-depth repairs. It also discusses the results of comprehensive statistical analysis conducted on material performance and laboratory testing data. The results of a detailed cost-effectiveness analysis are also presented.

Software

SW120* **Introduction to Work Zone Basics and Flagging (CD-ROM)** – Developed by the Arizona LTAP as an introduction for new employees and a resource for existing employees. (System requirements include Window 95, NT, or 98)

SW121* **TRB 3D in Transportation Symposium & Workshop Interactive CD-ROM (Renaissance Orlando Hotel, May 26-29, 1999)** – Includes the symposium, opening session, exhibitors, workshops, site visits, presentations and conference snapshots. (System Requirements include Pentium 166MHz processor or higher, 32 MB of RAM, Windows 95, 98 or NT 4.0, 640x480 screen resolution, 16 bit sound card and speakers.)

SW-122* **SWEET's CD Fall 1999** – The electronic version of SWEET's Catalog files. The most current product information for construction professionals. Choose from over 1500 building product manufacturers with more than 11,000 products represented. (System requirements include Windows 95, 98 or NT 4.0 and Microsoft Windows Explorer 4.01, Pentium I processor, 32 MB of RAM and 2x CD-ROM drive.)

SW123* **DataPave Version 2.0 (CD-ROM)** – Contains one of the Worlds largest pavement databases. DataPave has been designed to easily navigate the structure of the LTPP Information Management System (IMS) database and export user selected information from the CD-ROMs. (System Require ments include Windows 95/NT operat-ing system or higher, IBM-compatible 486DX processor or higher, 16 MB of RAM, 120 MB of available hard disk space, super video graphics adapter with at least 800*600 resolution and 256 colors and a CD-ROM drive.)

Request for Videotapes & Publications

The publications and videotapes listed in the LTAP Quarterly Newsletter are available free or for a nominal charge upon request. Publications marked *Lending Library may be borrowed for several weeks, but must be returned to LTAP.

Anyone may borrow up to three videotapes at a time rent-free for two weeks.

You may order any of the advertised tapes by calling toll-free (800) 541-6671. Contact Jaime Jackson if you have any questions or concerns.

PUBLICATIONS

❑	**P-765***	Summary of Evaluation Findings for the Testing of Ice Ban
❑	**P-555***	Evaluation of the SSL MSE PLUS Retaining Wall System
❑	**P-2001***	Use of Guardrail on Low-Volume Roads According to Safety and Cost Effectiveness
❑	**P-1008***	Object Markers on Narrow Bridges on Low-Volume Rural Roadways
❑	**P-353**	LTPP Pavement Maintenance Materials: SPS-4 Supplemental Joint Seal Experiement, Final Report
❑	**P-354**	LTPP Pavement Maintenance Materials: PCC Partial-Depth Spall Repair Experiement, Final Report
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SOFTWARE

❑	**SW120***	Introduction to Work Zone Basics and Flagging (CD-ROM)
❑	**SW121***	TRB 3D in Transportation Symposium & Workshop Interactive CD-ROM
❑	**SW122***	SWEET's CD Fall 1999
❑	**SW123***	DataPave Version 2.0 (CD-ROM)
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VIDEOS

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The Local Technical Assistance Program Newsletter is published quarterly. Funding for this program is provided by the Federal Highway Administration through the Montana Department of Transportation, Montana State University and a portion of Montana's gas tax revenues. This newsletter is designed to keep you informed about new publications, new techniques and new training opportunities that may be helpful to you and your community. Individuals wishing to receive future copies of the newsletter at no cost may send their request to LTAP, 416 Cobleigh Hall, Montana State University-Bozeman, Bozeman, MT 59717-3910.