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### Acronyms in this issue

AASHTO	American Association of State Highway and Transportation Officials	Iowa DOT	Iowa Department of Transportation
CTRE	Center for Transportation Research and Education	ISU	Iowa State University
FHWA	Federal Highway Administration	LTAP	Local Technical Assistance Program
		MUTCD	Manual on Uniform Traffic Control Devices

## Keeping county roadsides safe

HAZARDS in county road right-of-ways (ROWs) can pose major, even fatal, danger to drivers. They also represent potential liability problems for landowners/tenants and the county. Bob Sperry, Story County engineer, is working with residents to keep county roadsides safe.

### The problem

In Story County, more than a third of accidents on county roads involve vehicles that leave the roadway.<sup>1</sup> Obstructions in the ROW—driveway retaining walls, fences, and even mailbox supports—increase the likelihood that errant vehicles will be damaged and passengers injured. Crops in the ROW can limit visibility and drainage, especially in inclement weather, which is an additional hazard for drivers.

Landowners and tenants may not be aware that the Code of Iowa requires county boards of supervisors to maintain safe recovery areas in ROWs<sup>2</sup> or that the county-controlled ROW includes not only the traveled portion of the roadway but also shoulders, embankments, and ditches—including ditches in front of private property.

Sometimes landowners or tenants build structures in the ROW to improve aesthetics, convenience, or access without fully considering the safety and liability implications. If a crash occurs involving one of those structures, the county, the property owner/tenant, and whoever constructed the object might be held liable.

### The solution

Working closely with the public, Sperry has begun an active campaign to improve ROW safety in Story County. Efforts include

- communicating with the public about ROW hazards,
- taking a countywide inventory of private structures in the ROW,
- on a safety-priority basis, contacting landowners/tenants who have existing hazards and, when possible, providing assistance for removing the hazards, and,
- developing a county ordinance prohibiting unauthorized use of ROW without a permit. The ordinance provides the county with a specific mechanism for enforcing the Code of Iowa's general requirements regarding ROW hazards.

Communication efforts Sperry suggests include preparing informational news releases for local media, posting information on the county website, and presenting information to local groups, including the board of supervisors, developers, and landscapers. Story County developed a one-page flier about ROW safety to distribute to interested individuals and groups.

*ROW . . . continued on page 2*



Some mailbox supports in the right-of-way can be dangerous for errant vehicles.

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**The mission of Iowa's LTAP:**

To foster a safe, efficient, environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance, and technology transfer, thus improving the quality of life for Iowans.

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**ROW . . . continued from page 1**

Most important, he says, is talking one-on-one with local citizens about potentially hazardous encroachments. Ongoing, personal communication is essential.

Public hearings regarding development of an ordinance provide an opportunity to speak directly with the public. They allow people to voice their concerns or propose changes to the draft ordinance. Sperry says that, in Story County's case, comments at the public hearings resulted in important clarifications in the final ordinance.

Sperry suggests developing a professional, nonconfrontational presentation for the board of supervisors and for public hearings that lets the data tell the story about ROW safety and that emphasizes everyone's responsibility—"We're all in this together."

**Story County's ROW ordinance**

In May 2002, Story County passed an ordinance prohibiting

- excavating, filling, or making any physical changes to any part of the ROW,
- cultivating and growing crops on the ROW, and
- placing trash, junk, rocks, corncobs, brush, vehicles, machinery, billboards, signs, hazardous mailbox supports, and advertising devices in the ROW and constructing fences, ditches, water breaks, and drainage tiles in the ROW.

The ordinance establishes a system of fines for violators. It also establishes a permitting process<sup>3</sup> whereby citizens can apply for exceptions regarding proposed landscaping or other projects in the ROW. Sperry emphasizes that, if a proposed project doesn't qualify for a permit, county staff will work with applicants to adjust their plan or develop alternatives.

Story County's ordinance is nonretroactive, so existing ROW hazards are being reviewed on a case-by-case basis. Sperry is working with individuals to find mutually beneficial solutions. If a mailbox post in the ROW is too large, for example, the county may allow the owner to drill holes to make the post more forgiving if struck by a vehicle.

"It's not the mailboxes that are the problem. It's what holds them up," says Sperry.

**For more information**

To review Story County's right-of-way ordinance (Ordinance No. 107), permit request form, and general information about ROW hazards, go to the engineer's website, [www.storycounty.com/engineer/default1.html](http://www.storycounty.com/engineer/default1.html).

You can review Chapter 319 of the Code of Iowa at [www.legis.state.ia.us/cgi-bin/IACODE/Code2001.pl](http://www.legis.state.ia.us/cgi-bin/IACODE/Code2001.pl).

For specific information about Story County's roadside safety campaign, contact Bob Sperry, 515-382-7355, [engineer@storycounty.com](mailto:engineer@storycounty.com). •



Other right-of-way obstructions (top to bottom): driveway retaining walls, crops, and footbridges

<sup>1</sup>Iowa Traffic Safety Data Service, Iowa State University

<sup>2</sup>Section 319.1 of the Code of Iowa requires county boards of supervisors to "cause all obstructions in highways, in their respective jurisdictions, to be removed." (Note, the definition of "highway" includes the ROW.)

<sup>3</sup>Section 319.14 of the Code of Iowa states that a permit must be obtained from the county before any work begins in a county ROW.

# Selecting pavement marking materials: Balancing initial cost and durability

THE LIFESPAN of pavement markings is typically between six months and several years, compared to the typical lifespan of pavements between 10 and 25 years. Because repeated replacement of pavement markings can be costly over time, agencies should consider durability and life-cycle costs when selecting pavement marking materials.

## Pavement marking types

Pavement marking materials can be divided into two common types: nondurable and durable.

**Nondurable** markings include paints. The use of solvent-based (alkyd) paint has been restricted by Environmental Protection Agency regulations. Water-based (latex) paints are generally less expensive than durable markings and are widely used on Iowa roads.

**Durable** markings include epoxy, thermoplastics, poly urea and urethane, and preformed tape. Though these types can be more expensive than paints, they have a longer expected service life.

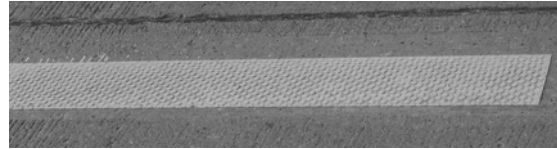
## Comparing materials

Cost, durability, and retroreflectivity are the primary criteria by which to evaluate pavement marking materials. The cost of any given pavement marking material varies by manufacturer and type. The service life of a material can also vary widely depending on pavement surface, traffic volume, weather condition, plowing activity, etc. Some general trends and comments are provided in the table below.

Other considerations when selecting pavement marking types: ease of installation, drying time,



Water-based paint markings (above) are typically replaced every six months to two years.



Tape markings can last up to seven years. These textured tape markings on South Duff Avenue in Ames have performed well through three winters.

and an assessment of how the materials would perform for the given pavement type, road use, and climate.

## For more information

Gary Thomas, former assistant professor of civil engineering at Iowa State University, conducted a thorough synthesis of research regarding durable, cost-effective pavement markings for the Iowa Highway Research Board (TR-454). See his report online, [www.ctre.iastate.edu/reports/pavemark.pdf](http://www.ctre.iastate.edu/reports/pavemark.pdf).

For more information contact Tom McDonald, safety circuit rider, CTRE, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu); or Kurtis Younkin, Office of Traffic and Safety, Iowa DOT, 515-239-1184, [kurtis.younkin@dot.state.ia.us](mailto:kurtis.younkin@dot.state.ia.us).

Marking Type	Average Cost	Expected Service Life	Comments
Water-based paint	\$0.10/ft	0.5–2 years	Limited use in cold weather.
Epoxy	\$0.60/ft	2–5 years	
Poly urea and urethane	\$0.85/ft	2–5 years	Can be placed at temperatures as low as 32°F. This product has only been used in Iowa since 1999, so the upper end on service life is speculative.
Thermoplastics	\$0.90/ft	5–7 years	Not for use on portland cement concrete pavement.
Preformed tape	\$1.00–4.00/ft	2–7 years	Easily removed when desired, such as in construction zones. Can peel, chip, and crack during snow removal and other activities.

## LTAP Advisory Board

The people listed below help guide and direct the policies and activities of Iowa's Local Technical Assistance Program (LTAP). Contact any of the advisory board members to comment, make suggestions, or ask questions about any aspect of LTAP.

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## Traffic calming: an option in Iowa?

Tom McDonald, Safety Circuit Rider

SOME OF the most common traffic problems and complaints in communities involve high traffic speeds and congested or otherwise problematic intersection operations.

Too often, the only perceived solutions are lowering speed limits and installing more stop signs. In the short term, these efforts may have a positive effect. Often, however, initial improvements in safety (e.g., slower traffic speeds and fewer crashes at intersections) do not last.

In fact, in the long term, lower speed limits and more stop signs may be counterproductive. Without focused, increased enforcement, unreasonable speed limits (i.e., lower than the 85<sup>th</sup> percentile) and unnecessary stop control will be regularly violated.

Signs alone don't always result in changed driver behavior. But physical measures can change driver behavior, which is why traffic calming measures can be effective.

### Traffic calming defined

The Institute of Traffic Engineers defines traffic calming as "the combination of mainly physical measures to reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users."

Properly designed physical alterations to a road or street can cause or invite motorists to decrease their driving speed and pay more attention to their driving. The result can be safer travel for both motorists and pedestrians.

Section G9.1 of the *Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties* briefly describes traffic calming alternatives, from diverters to speed humps, as well as design options. Traffic circles and roundabouts are also discussed. (Generally, roundabouts are considered traffic control devices, not traffic calming devices.)

### Traffic calming options

If residents in a neighborhood are concerned about excess traffic, a diverter or semi-diverter might be the answer.

For speeding complaints, several options could be considered, includ-

ing bulb-outs, chokers, chicanes, or even speed humps.

These features can be designed to offer additional protection for pedestrians and aesthetic enhancements to the neighborhood. And, most of these improvements can be added for low cost.

None of these options is a panacea; no such thing has yet been discovered in traffic engineering. But they do offer attractive and often more effective alternatives to the standard, familiar approaches of the past. And they work without increased enforcement!

### Intersection traffic control

Traffic control at some urban intersections can be particularly challenging. When crashes occur and congestion increases, traffic signals are not guaranteed to significantly reduce either problem. Signalization is costly and requires ongoing maintenance.

In Iowa and other states, roundabouts are becoming useful alternatives to signals at urban intersections. Roundabouts require minimal maintenance and are operationally sound. Although installing a roundabout will require changing an intersection's physical characteristics, it can be less costly than installing sophisticated traffic signals. Perhaps most important, many studies have shown that roundabouts are influential in reducing crashes.

Whenever urban intersection improvements are anticipated or new intersections designed, roundabouts should be considered along with traffic signals.

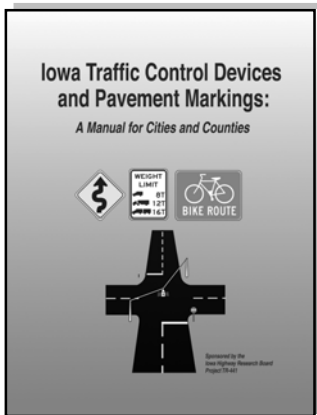
When considering traffic calming devices or roundabouts

Several precautions are noteworthy:

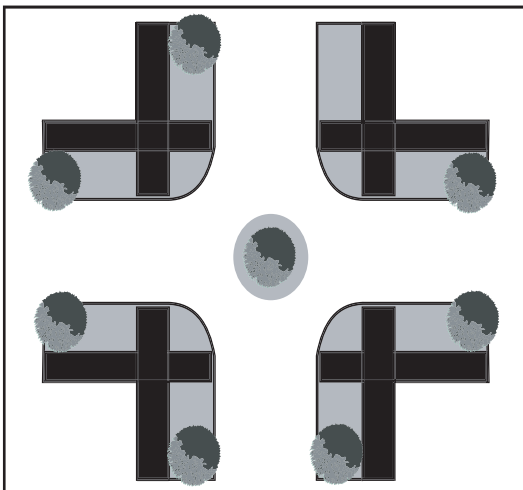
- Study the options carefully.
- Use only modern designs, especially for roundabouts (some early roundabout designs in this country had problems, but in recent years designs have been significantly improved).
- Keep the public involved from the beginning and throughout the planning and installation process (driver education efforts may be useful as well to help drivers navigate new, unfamiliar street features).

*CALMING...continued on top of next page*

*Editor's note: This article is part of a series about Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties. The manual was funded by the Iowa Highway Research Board (TR-441) and supplements the MUTCD. It is available online, [www.ctre.iastate.edu/pubs/itcd/index.htm](http://www.ctre.iastate.edu/pubs/itcd/index.htm). Or contact Tom McDonald, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu).*



In certain situations, properly installed traffic circles can improve safety at intersections by slowing traffic.



### For more information

To become familiar with traffic calming techniques, review Section G9.1 of the *Iowa Traffic Control Devices and Pavement Markings Manual for Cities and Counties*. Iowa City, Clive, Des Moines, and Bettendorf have constructed traffic circles, roundabouts, and other nontraditional traffic calming/traffic control devices.

The Institute of Transportation Engineers has published several detailed publications on traffic calming. These publications are available through CTRE's library, as is the FHWA's 2000 publication, *Roundabouts: An Informational Guide*, (P1482). Contact Jim Hogan, librarian, 515-294-8103, hoganj@iastate.edu.

In addition, training workshops can be arranged through the Iowa LTAP center. Contact Safety Circuit Rider Tom McDonald, 515-294-6384, tmcdonal@iastate.edu. •

## MUTCD compliance dates: January 2003

Note approaching deadlines for complying with revisions to the millennium edition of the MUTCD:

Section 3B.01—Yellow Centerline and Left Edge Line Pavement Markings and Warrants, compliance date January 3, 2003

Section 3B.07—Warrants for Use of Edge Lines, compliance date January 3, 2003

These provisions will not be affected by Proposed Amendments for MUTCD, Revision 2 (posted May 2002). If you do not have a copy of the most recent MUTCD, you can find the provisions on the Federal Highway Administration's MUTCD website, <http://mutcd.fhwa.dot.gov/>. •

## Websites that work for you

### NCHRP approved traffic control devices

This Texas DOT web site lists all of the acceptable traffic control devices for use in work zones that comply with the standards set by the NCHRP. [www.dot.state.tx.us/insdtdot/orgchart/trf/ctrlldvcs/trftrfeps1.htm](http://www.dot.state.tx.us/insdtdot/orgchart/trf/ctrlldvcs/trftrfeps1.htm)

### Guides to better work safety

The FHWA provides a great resource for agency safety coordinators. It has links to various work safety guides including the *Best Practices Guidebook* and *Meeting the Customer's Needs for Mobility and Safety During Construction and Maintenance Operations*. [www.ops.fhwa.dot.gov/wz/techshar.htm](http://www.ops.fhwa.dot.gov/wz/techshar.htm)

### Planning and development basics for community leaders

This site helps community leaders, especially in rural communities, with planning and development. It teaches users planning and development basics such as government policies, planning, benchmarking (including an introduction to GIS), development concepts, growth concepts, and economic development. The tools on the site are free. <http://www.cdtoolbox.org>

### Innovations that work

See last year's winners from North Dakota's "You Show Us" contest (similar to Iowa's "Build a Better Mousetrap" contest). Some inventions include the "Cutting Edge Installation Jack," "Culvert Transport Trailer," and "Air Operated Hydraulic Jack." [http://hardhat.cme.ndsu.nodak.edu/ndltap/quarterly\\_newsletters/fall2001.pdf](http://hardhat.cme.ndsu.nodak.edu/ndltap/quarterly_newsletters/fall2001.pdf)

### Protecting public transportation from terrorism

This site has informative articles about researching anti-terrorism measures in public surface transportation. They include *Protecting Public Transportation Against Terrorism and Serious Crime: An Executive Overview* and *Protecting Public Transportation Against Terrorism and Serious Crime: Continuing Research on Best Security Practices*. [www.transweb.sjsu.edu/pubs.htm](http://www.transweb.sjsu.edu/pubs.htm)

### The high performance concrete forum

This is the FHWA's forum for high-performance concrete (HPC). Discussions include HPC projects in other areas, definitions and research, mix design and proportioning, structural design and specifications, costs, and applicable case studies. <http://knowledge.fhwa.dot.gov/cops/hpcx.nsf/home>

### The most dangerous two-lane highways in the country

"Dateline NBC" aired a story regarding the most dangerous undivided, two-lane highways in the country. This site contains the article, video, and an interactive road fatality map. Although parts of this news story are somewhat exaggerated, it has some good insights. <http://stacks.msnbc.com/news/748422.asp?cp1=1>

### One-stop site for transportation curricula

Use this FHWA site to find information on Transportation Curriculum Coordination Council (TCCC) training courses, state programs, and contacts. It also links to regional training and certification programs and the latest TCCC news. [www.nhi.fhwa.dot.gov/tccc/tccc.html](http://www.nhi.fhwa.dot.gov/tccc/tccc.html)

# It's HOT out there!

## Sizzling facts

**Over-exposure to heat kills more Americans each year than do hurricanes, lightening, tornadoes, floods, and earthquakes combined.** An average of 300 people annually.

**Heatstroke** (also called sunstroke) **can cause death or permanent disability.** Seek medical attention immediately.

**Heatstroke can occur very quickly, within 10 to 15 minutes.** If the body can't adequately cool itself for too long, body temperature can suddenly zoom to the danger point, 103 degrees Fahrenheit or higher.

Unlike heat exhaustion, characterized by profuse perspiring and clammy, cool, pale skin, the more dangerous **heatstroke is characterized by lack of perspiration and dry, warm, red skin.**

**High humidity and little air movement increase the risk of heat exhaustion or heatstroke.** Evaporation of sweat is our bodies' primary cooling mechanism. On still, humid days, sweat evaporates slowly. •

WORKING OUTDOORS during the hot, muggy, dog days of summer can be hazardous to your health. If your body gets overheated and isn't cooled adequately through the evaporation of perspiration, you can get very—even dangerously—sick.

**Heat rash** is simply uncomfortable and annoying. **Heat exhaustion** is more serious and should be treated promptly to avoid the most dangerous heat-related illness, **heatstroke**. Symptoms and treatment for these conditions are listed on the following page.

### Who's at risk?

*Everyone* who works (or plays!) in the heat and humidity can suffer from heat-related trauma. If you have any of the following conditions, however, you're particularly susceptible:

- Obesity. Or just some extra pounds. (Your body's already stressed.)
- Heart disease or poor circulation. (Ditto.)

- Several days' exposure to high temperatures and inadequate fluid intake.
- Sunburn.
- Illness and/or fever.
- Prescription drugs. (Check with your pharmacist to determine if your medications could affect your body's response to heat.)

### Supervisors

On blistering days help your workers stay healthy. Provide a heat-safe work environment and schedule, as outlined below.

### For more information

Learn more about heat-related illnesses through the National Center for Environmental Health's website, which provided much of the information for this article. NCEH is a program of the Centers for Disease Control and Prevention (CDC), an agency of the Department of Health and Human Services. [www.cdc.gov/nceh/hsb/extremeheat/](http://www.cdc.gov/nceh/hsb/extremeheat/). •

## Protect and prevent

TAKING A FEW SIMPLE precautions in hot weather will protect most people from heat-related illness:

**Drink, drink, drink**—water, fruit juice, or sport drinks—up to a quart an hour. (*Don't* wait until you're thirsty to drink. No alcohol or caffeine, light on the sugar. Avoid very cold drinks when you're hot; they can cause stomach cramps.)

**Wear** lightweight, light-colored, loose-fitting clothing with long sleeves and pantlegs, a wide-brimmed hat, sunglasses, and a broad-spectrum sunscreen.

**Slow down.**

**Avoid** extremely strenuous activity in the heat.

**Rest** frequently in cool, shaded areas.

**Use** fans, ventilation, and air conditioning whenever possible. (A few hours in air conditioning can help your body stay cooler when you return to the hot outdoors. Don't work in hot, unventilated environments.)

**Limit** outdoor work to morning and evening hours.

### Be a buddy

Different people tolerate heat to varying degrees. Keep an eye on your co-workers. If they display symptoms of heat exhaustion or heatstroke, listed in the table, take immediate action. •

	Heat rash	Heat exhaustion	Heatstroke (sunstroke)
Definition	Skin irritation caused by excessive sweating	Illness due to overheated body, sometimes following several days' exposure to high temperatures and inadequate fluid intake. Monitor victim closely!  If untreated, may progress to heatstroke.	<b>Life-threatening</b> medical emergency caused by excessive, and often sudden, rise in body temperature when the body cannot cool itself. The fever can permanently damage internal organs or cause death.
Symptoms	<ul style="list-style-type: none"> <li>- Red clusters of pimples or small blisters</li> <li>- Commonly affects neck, upper chest, groin, and elbow creases.</li> </ul>	<b>Symptoms may include any or all of these.</b>	
		<ul style="list-style-type: none"> <li>- Tiredness, sluggishness, weakness (<i>often early symptoms</i>)</li> <li>- Heavy sweating</li> <li>- Pale, cool, clammy skin</li> <li>- Nausea</li> <li>- Headache</li> <li>- Muscle cramps</li> <li>- High body temperature</li> </ul>	<ul style="list-style-type: none"> <li>- Extreme confusion, dizziness, disorientation; incoherent speech</li> <li>- Unconsciousness</li> <li>- No sweating</li> <li>- Red, hot, dry skin</li> <li>- Nausea</li> <li>- Throbbing headache</li> <li>- Strong, rapid pulse</li> <li>- Small pupils</li> <li>- Extremely high fever</li> </ul>
Core Body Temperature	<i>Normal</i>	<i>Up to 102° F</i>	<i>Can occur =&gt; 103° F</i>
Treatment	<ul style="list-style-type: none"> <li>- Keep affected area dry</li> <li>- Provide a cooler, drier environment</li> <li>- Use dusting powder to ease discomfort</li> <li>- Don't use ointments or creams</li> </ul>	<b>Do not administer alcohol rub or fever-reducing medication.</b>	
		<p>(Unless he's fainted, someone with heat exhaustion can treat himself.)</p> <ul style="list-style-type: none"> <li>- Drink, drink, drink cool (not too cold) beverages (nonalcoholic, no caffeine, low sugar)</li> <li>- Take a cool shower or bath</li> <li>- Move to a cooler area: a shaded or air conditioned environment</li> <li>- Rest</li> <li>- Provide air movement (a breeze, fan)</li> <li>- Switch to lightweight clothing</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Get immediate medical attention</b> on site or transport to emergency room</li> <li>- Lower body temperature immediately by <ul style="list-style-type: none"> <li>- removing clothing</li> <li>- moving to shaded or air-conditioned environment</li> <li>- immersing in cool bath or applying cool, wet towels</li> <li>- increasing air flow</li> </ul> </li> </ul>

## Road workers and skin cancer

*Road workers are among the highest at-risk groups.*

IN HOT WEATHER or cold, sun or shade, anyone whose job requires working outdoors risks developing skin cancer due to overexposure to ultraviolet (UV) rays. Road workers are among the highest at-risk groups. Some workers may retire only to develop skin cancer years later due to the long-lasting, cumulative effects of UV exposure.

### The challenge

Skin cancer is the most common type of cancer in the country and its occurrence is increasing, according to the National Cancer Institute. Repeated, prolonged exposure to ultraviolet-A (UVA) and ultraviolet-B (UVB) rays, can cause melanoma and carcinoma, the two primary types of cancer affecting the skin.

Skin cancer often affects people who are fair-skinned, burn easily, or have had one or more severe, blistering sunburns. But it's a mistake to think you're safe just because your olive skin tans easily. People of all hues can develop skin cancer.

*Carcinoma*, the most common skin cancer, begins in particular cells in the outer layer of the skin. Carcinoma rarely metastasizes (spreads to other organs).

Although a less common form of skin cancer than carcinoma, *melanoma* is one of the most common cancers in young adults—and it is life threatening. It begins when skin cells that produce melanin, the pigment that gives skin its natural color, become malignant, and it tends to spread to other organs if not treated early.

### Protect yourself

Whenever you're working (or playing) outdoors, protect yourself. Wear a hat that shields not only your head from the sun but your ears and neck as well, plus long-sleeved shirts, gloves, and long pants. *In addition*, always use sunscreen.

Road workers should choose a sunscreen with a sun protection factor (SPF) of 25 or 30 and "broad-spectrum" protection to screen out both UVB and UVA rays. Apply sunscreen liberally and reapply every two hours—more often if you're sweating.

"Sunblock" is the same as "sunscreen." No skin product can actually block the sun's rays from contacting exposed skin.

Whenever possible, avoid working outdoors during mid-day when the sun's rays are most direct.

### Treatment

Carcinoma can generally be treated by removing affected skin tissue. The procedure may leave some slight scarring.

If left untreated, carcinomas can become enlarged and destroy surrounding tissue. In rare cases, the cancer can spread to other parts of the body including bones, liver, and brain.

Melanoma can be cured if it is diagnosed and treated when the tumor is thin and has not deeply invaded the skin. Treatment includes surgical

*CANCER...continued on next page*

## Skin cancer signals

Check your skin regularly and, if you have a suspicious area, see a dermatologist immediately.

*Carcinoma.* Pay attention to any of these irregularities:

- small bumps, often on the nose or ear, or flaky, scabby patches on the skin, which then become bumps, usually with an abscess
- red to flesh color
- firm and rubbery texture
- waxy or translucent appearance

*Melanoma.* Often, the first sign of melanoma is a change in the size, shape, color, or feel of an existing mole.

In addition, the American Academy of Dermatology has developed a simple, ABCD method for determining if a spot on the skin might be a melanoma. A skin irregularity may be a melanoma if

- Asymmetrical shape (one half looks different from the other)
- Border is jagged, notched, or scalloped
- Color ranges from pink to red to dark brown, often together
- Diameter is larger than six millimeters (about the width of a pencil eraser)



# E.Z. simplifies hauling, unloading pipe rack

UNLOADING long, heavy culvert pipes from a roof rack can be difficult for one person. Pat Zimmerman, culvert and drainage foreman in Johnson County Secondary Roads, has designed and built a solution—an E.Z. rack.

The E.Z. rack is an adaptation of a standard roof rack. On the E.Z. rack, the outside tines will drop 90 degrees and lay parallel to the ground when it's time to unload. Just give a pipe a push, and it drops to the ground.

To build the E.Z. rack, Zimmerman used 1 1/2-inch square tubing. He replaced the roof rack's original outside tines with longer ones (they need to be long enough to keep the pipe being unloaded from dropping on the mirror) and added a pivot point and a stop. He made the right side of the rack large enough to handle culvert pipe up to 24 inches by 30 feet.

Both outside tines need to drop at the same time. They are controlled by a lever at the rear of the truck. The lever releases two spring-loaded pins, which hold the tines in their regular upright position.

## CANCER...continued from previous page

removal of the affected skin, perhaps in conjunction with chemotherapy, biological therapy, or radiation therapy.

However, when a melanoma becomes thick and deep, the disease often spreads to other parts of the body and is difficult to control.

### For more information

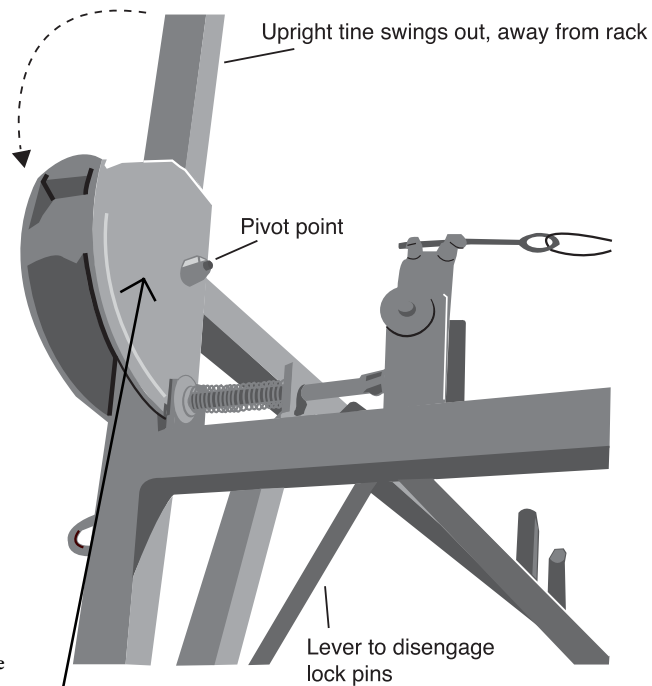
Some of the information in this article was found on the National Cancer Institute's excellent website, [www.nci.nih.gov/CancerInformation/](http://www.nci.nih.gov/CancerInformation/).

To contact a dermatologist in your area, contact the American Academy of Dermatology (AAD), 888-462-DERM (3376), or visit the AAD website, [www.aad.org](http://www.aad.org).

*Thanks to the International Slurry Surfacing Association Report for allowing us to adapt information from the May/June 1998 article, "Working Under the Sun: A Catch-22 for Road Workers."* •

The E.Z. rack also eliminates the need for hitching up a trailer to transport culvert pipe. That saves hook-up time and fuel.

For more information about the E.Z. rack, contact Pat Zimmerman, 319-256-6046. •



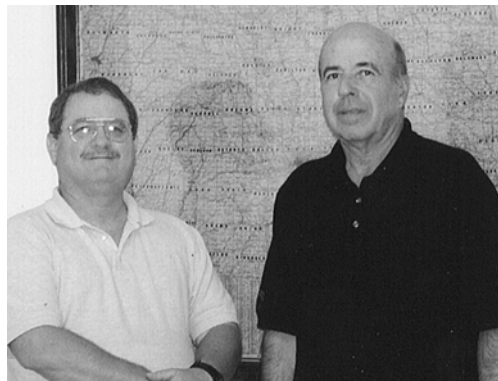
The E.Z. rack tines have been lowered (top photo), and the rack is ready for its load. Once a pipe has been loaded (bottom photo), the tines are returned to their regular upright position.



## CTRE-Iowa DOT library partnership expands knowledge base

A NEW PARTNERSHIP makes it easier for Iowa's busy transportation professionals to

- stay abreast of new technology,
- track new developments in any specialty area, and
- access a worldwide network of transportation resources.



Hank Zaletel (left) and Jim Hogan

CTRE's LTAP library (the Stan Ring Memorial Library) is teaming up with Iowa DOT's library to provide transportation agencies and other organizations with the information they need.

Hank Zaletel and Jim Hogan from the Iowa DOT and LTAP, respectively, collaborate closely to find the resources you need. They can also refer you to experts in specialty areas.

### Plugging in to these resources

For assistance, contact either Hank or Jim: Hank Zaletel, 515-239-1200, hank.zaletel@dot.state.ia.us. Jim Hogan, 515-294-8103, hoganj@iastate.edu.

The LTAP library catalog is online, [www.ctre.iastate.edu/library/search.cfm](http://www.ctre.iastate.edu/library/search.cfm). Use it to search, sort, and order materials electronically. Jim can send you a printed catalog on request. •

## Two complementary services

Iowa DOT's library's extensive body of transportation research, data and graphics, and history includes books, technical reports, videotapes, maps, aerial photographs, and historic documents.

The library is connected to a network of state DOT resources across the country, has access to the comprehensive Transportation Research Information Service (TRIS) and, through membership in the Online Computer Library Center, can borrow materials from thousands of libraries worldwide. Hank Zaletel and his staff regularly provide comprehensive reference and database services to transportation agencies and research entities, like CTRE.

The LTAP library emphasizes training materials, with 640 videotapes, 24 training packages, 49 compact disks, 6 interactive compact disks, and 17 slide presentations. The library also has 1,370 research and technical publications. Librarian Jim Hogan regularly helps Iowa's transportation agencies access materials on a variety of specific topics. •

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### LIBRARY ACQUISITIONS . . . continued from previous page

**V690 Smoothing and Reshaping the Traveled Way.** This video covers detailed step-by-step processes used for both smoothing and reshaping a road. It includes crowned, insloped, and outsloped roads and transition sections.

**V691 Maintaining the Ditch and Surface Cross Drains.** This video provides comprehensive instructions for correctly constructing and maintaining ditches, culverts, and various surface cross drains.

**V692 Pennsylvania Bridges: Maintaining the Past, Preserving the Future.** This video highlights the

Pennsylvania DOT's maintenance practices and provides an overview of the importance of bridge preservation.

**V693 Cultural Resource Protection.** This video briefly discusses archeological surveys done during the Iowa DOT's project development process. It also provides instruction on what should be done if a burial or potential burial site is disturbed during construction, maintenance, or other activities involving soil excavation. •