

# INSIDE



IOWA DEPARTMENT OF TRANSPORTATION NEWSLETTER

JANUARY 2006

## INSIDE INSIDE

DOTer loses leg in auger accident .....	3
Changes to CDL law .....	4
Interstate history - slipform paver .....	6
Abrams named Design Employee 2005 .....	9
Newton kids get to see DOT truck .....	10
Trophy Case .....	12
Steier travels to England .....	13
Toys for Tots wrap-up .....	15
Salt 101 .....	20



# ONE 2 ONE

WITH DIRECTOR NANCY RICHARDSON

**O**n January 9 the 2006 Iowa legislative session will begin. As always, when the legislature is in session it's a very busy time for many employees who review proposed legislation, identify impacts of the proposals, rewrite language, calculate fiscal impacts, and generally assess how legislation will impact the department. I expect this year's session will be just as busy and interesting as in the past.

DOT's legislative package for this year is primarily technical changes. Legislative liaison, Elizabeth Baird, has been working with the divisions to identify changes we need to make and develop the language to implement what needs to be done. Part of the process of developing a legislative package is to determine who will support our requests, as well as who will be opposed to what we want to accomplish. Elizabeth and various staff have been meeting with individuals and groups throughout the summer and fall to discuss details and build consensus whenever possible.

Although the DOT won't be sponsoring bills on major issues, there are some topics we're keeping our eye on this year. Increased production of ethanol, especially E85, is expected to be debated. The topic of eminent domain as relates to development of trails may be addressed, and discussion related to the Graduated Driver License is likely to be interesting.

The composition of the General Assembly remains the same as last year with an even number of Republicans and Democrats in the Senate and a 51-49 (Republican-Democrat) split in the House. This make-up of the legislative body proved interesting last year as the two groups determined how they were going to govern themselves and select their leadership. All in all it worked pretty well and I suspect it will again this year.

As I indicated, the legislative session is a busy time and many employees get involved. We have proven processes in place and everyone does a great job of making sure we're providing complete and accurate information to decision-makers. Thanks to everyone for your continued help and support throughout the process.

*Nancy*



## DOTer loses leg in auger accident

**T**he scenario plays out hundreds of times a year in every DOT garage in the state. Operators come in early to check roads. When they're done, they clean out their vehicles and head home to sleep a little before the next snowfall arrives.

Chris Domeyer reported to the Manchester shop early in the morning of Nov. 17. He completed his run and took the truck around behind the shop to clean it. It was nearly 9:20 a.m. when the shop phone rang.

Equipment Operator Senior Penny Holtz answered the call. It was Domeyer on his cell phone from the back of the truck. His leg had become caught in the auger and he needed help – fast.

Within seconds Highway Maintenance Supervisor Kim Sheehy and Equipment Operator Charlie Dighton ran to his aid. Sheehy had Dighton jump into the cab and turn off the truck. In the meantime Communications Technician Erich Eggers heard Holtz call for help and came to the rescue. Sheehy, a volunteer firefighter trained in first aid, sent Eggers into the truck to help Domeyer while he called 911. “Erich came out at just the right time,” said Sheehy.

Eggers said, “There was quite a bit of blood coming out of the truck, so I jumped in to help.” Inside the bed of the truck Eggers found Domeyer with his foot wedged in the auger. Eggers removed his belt and set it as a tourniquet on Domeyer’s lower leg. “I spent 20 years in the military. We ran emergency drills until I was sick of them, but they really paid off. I knew where to find the femoral artery to stop the bleeding.” It was now 9:25 a.m.

Sheehy said, “It seemed like forever, but Manchester police officer Jim Wessels arrived in just a few minutes to help Erich. The hospital is only about two blocks away, so the EMTs were there quickly, too. Our mechanic, Jeff Rissler, brought out a cutting torch to assist the EMTs. Everything happened at once and just the way it needed to so we could save Chris. I’ve seen these situations as a firefighter, and I’ve learned that you just have to sense the seriousness of a situation and act on that. I knew Chris was minutes from this accident turning into something much worse.”

The Manchester fire department extricated Domeyer from the truck and he was taken by air ambulance to St. Luke’s Medical Center in Cedar Rapids where his leg was amputated just below the knee.



(Front row, from left) Charlie Dighton, Erich Eggers, Chris Domeyer (back row) Penny Holtz, Kim Sheehy (not pictured, Jeff Rissler)

Even before another surgery scheduled for Saturday to repair his leg, Domeyer was ready to set a game plan to go home. “On Friday the doctor came in and told me they thought I would have to have two or three more surgeries to repair the damage. I asked him how long he thought I needed to be in the hospital and told him I’d like to be home for Thanksgiving. When the doctor said he didn’t think that was possible, I asked about my birthday, Dec. 6. He said that was a date we could shoot for.”

Domeyer had the second surgery on Saturday, Nov. 19. “The doctors did a great job,” said Domeyer. “They were able to take care of everything with the second surgery. When I asked if I could get a pass to go home for my wife’s family Thanksgiving on Thursday and then another one for my family Thanksgiving on Saturday, the doctor asked me why I thought I needed to come back. I was out of the hospital less than a week after the accident and was fitted with my first prosthetic limb Dec. 5.”

Domeyer has a long recovery ahead of him, but his enthusiasm has already pushed his recovery far in advance of what the doctors expected. “I have physical therapy three times a week and I’m walking using a walker,” he said. “I have a special permit from the DNR and have bagged two deer since the accident.”

# How you drive your personal vehicle may affect your CDL

**C**an violations received while driving your personal vehicle affect your job? “Yes, if your job requires that you have a driver license, and especially if your job requires you to have a valid commercial driver’s license to perform your work duties,” says Sue Brott of the Office of Employee Services (OES).

Brott says many DOT employees required to hold a valid commercial driver’s license (CDL) are unaware that being arrested for offenses in their personal vehicles on their own time can cause their CDLs to be revoked. If an employee has a license revoked, there are options the DOT can pursue depending on the employee’s specific work assignment. DOT policy 210.05 states, “When an employee loses either a license or certificate that is required to perform the duties of the position, the employee may be temporarily reassigned duties, placed on unpaid leave not to exceed six months, or terminated based on the individual circumstances of the case.”

In most cases, the employee’s supervisor will work with OES to reassign duties for the employee. For an equipment operator in the field, that may include such things as mowing, painting, landscaping or other duties that would nor-

mally not be the employee’s primary work assignment.

Brott says that although OES and the supervisors try to maintain employment of an employee whose CDL is revoked, they must abide by the law and DOT policy. A recent change in Iowa law as to the length of revocation for certain offenses has altered DOT options for employees with revoked CDLs.

In general, an arrest for operating while intoxicated (OWI) will now result in a one-year revocation of the person’s CDL. Although the person may be eligible for a temporary restricted license (work permit) after 30 days to operate a personal vehicle, the law does not allow a work permit for the operation of a commercial motor vehicle for one year. “OWI offenses are a major concern,” said Brott. “From five to seven employees required to have a CDL in order to perform job duties are arrested each year for OWI in their personal vehicles while not in work status. The DOT policy is to allow the employee alternative work duties for up to six months. Since the law now says that a person’s CDL is revoked for one year, that employee will most likely have to change jobs because the DOT does not have the resources to allow alternative work assignments for a whole year.”

Brott says that, while OWI offenses are the most frequent reasons a driver will have a CDL revoked, there are several other offenses that cause the same result. “If you have two tickets for speeding 15 miles per hour or more over the legal limit within any three-year period, your CDL will be revoked for 60 days,” she said. “There are several other violations that can cause the revocation of a CDL, including reckless driving, following too close or even improper lane change. What employees need to understand is that their driving behaviors in their personal vehicles on their own time can not only significantly impact the safety of other motorists, but their own ability to fulfill their duties at the DOT.”

Listed on the next page is a chart of violations and how those violations will impact a CDL holder. See federal regulation 49 CFR 383.51 and Iowa Code section 321.205 for specific details. If you have questions about the DOT’s policy relating to the loss of a license or CDL, please contact your supervisor or Sue Brott at 515-239-1656 or [sue.brott@dot.iowa.gov](mailto:sue.brott@dot.iowa.gov). DOT policy 210.05 can be found on DOTNET.

A person is **disqualified for life** from operating a commercial motor vehicle, if convicted or found to have committed two or more of the acts or offenses resulting in a one-year loss of CDL (see next page) arising out of two or more incidents. However, a disqualification for life is subject to a reduction to a ten-year disqualification as provided in 49 CFR 383.51 adopted by the Iowa DOT.

A person is **disqualified for life** from operating a commercial motor vehicle upon conviction that the person used a commercial or noncommercial motor vehicle in the commission of a felony or aggravated misdemeanor involving the manufacturing, distributing or dispensing of a controlled substance as defined in section 124.101 of the Code of Iowa and held a CDL at the time the offense was committed.

Violations resulting in a one-year loss of commercial driver's license (CDL)	While driving Commercial Motor Vehicle (CMV)	While driving non-CMV, but a CDL holder
Under the influence of alcohol	Alcohol concentration of .04 or greater, first offense	Alcohol concentration of .08 or greater, first offense
Leaving the scene of a crash	Yes	Yes
Refusing to take a drug or alcohol test, as required	Yes	Yes
Operating a CMV involved in a fatal crash and being convicted of a moving violation that contributed to the fatality, or manslaughter or vehicular homicide	Yes	Not Applicable
Driving a CMV when, as a result of prior violations committed while operating a CMV, the driver's CDL is revoked, suspended or canceled, or the driver is disqualified from driving a CMV	Yes	Not Applicable
Using a vehicle to commit a felony or aggravated misdemeanor <u>other than</u> an offense involving manufacturing, distributing or dispensing a controlled substance.	Yes	Yes
Violations resulting in a 60-day or 120-day loss of commercial driver's license (CDL) for 60 days when convicted of two offenses within any three-year period and 120 days when convicted of three offenses during a three-year period	While driving CMV	While driving non-CMV, but a CDL holder
Driving a CMV on the highway when not issued a CDL	Yes	Not Applicable
Driving a CMV on a highway when not issued the proper CDL or endorsements to drive the vehicle	Yes	Not Applicable
Driving a CMV on a highway without having the CDL with the driver	Yes	Not Applicable
Speeding 15 miles per hour or more over the legal speed limit Reckless driving	Yes	Yes
Following another vehicle too closely	Yes	Yes
Improper lane changes	Yes	Yes
Any violation of the traffic laws except a parking violation or a vehicle weight violation, which is in connection with a fatal traffic crash	Yes	Yes

A person is disqualified from operating a commercial motor vehicle for **three years** if an act or offense described in the above table occurred while the person was operating a CMV transporting hazardous materials of a type or quantity requiring vehicle placarding.

# The slipform paver "Jeep Skate" inventor James Whitmore Johnson and interstate construction

by Dena Gray-Fisher

James Whitmore Johnson, or "Jimmy" as he was affectionately known, was the youngest of six brothers. Johnson was born Dec. 2, 1899, on a farm near Thurman in Fremont County. Following service in World War 1, he enrolled at Iowa State College, graduating with a bachelor of science (B.S.) degree in civil engineering. He went to work for the Iowa Highway Commission as an inspector June 13, 1922. In March 1924 he became assistant engineer for the engineering experiment station. In 1927 he received his master's degree. In June 1927 he became assistant lab chief at the Iowa Highway Commission and lab chief in April 1938.



James "Jimmy" Johnson, lab chief, Iowa Highway Commission.

In 1946 Johnson and two other commission employees, Rudy Schroeder and Willis Elbert, attended a demonstration of cement-treated base construction. After witnessing the demonstration, Johnson suspected that a mix with an increased proportion of cement that was vibrated into place

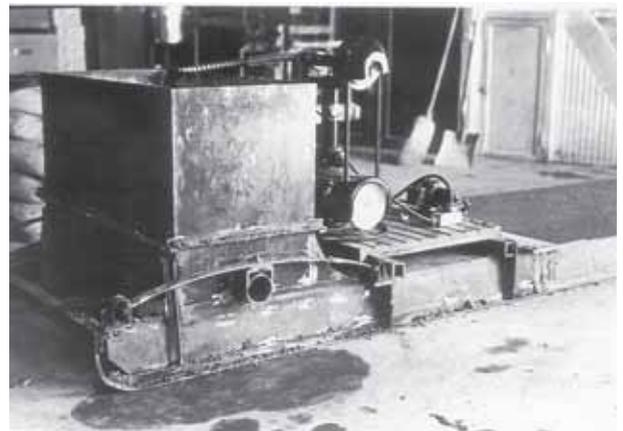
by a machine would eliminate the need for fixed forms and significantly increase the amount of pavement that could be laid in a day.

In 1947, at the Iowa Highway Commission laboratory in Ames, the three men experimented with their idea and constructed a small prototype that extruded a slab of portland cement concrete 18 inches wide by 3 inches deep.

The experiments continued and in 1948 the second model was built and tested. This model was also pulled by cable and laid a slab 3 feet wide by 6 inches deep. With this model, a 4-foot wide, 5-inch thick section of sidewalk was slipformed.



First prototype slipform paver, circa 1947



The second model of the slipform paver laid a section of pavement 3 feet wide by 6 inches. Circa 1948

Slipform paver history, go to next page

## PART FIVE IN A SERIES



The beginning of construction on the Interstate Highway System celebrates 50 years in 2006. This article includes excerpts from the May 1979 edition of the Iowa Department of Transportation's *Transtopics* newsletter, and Center for Transportation Research and Education's book, *Building Better Roads: Iowa's Contribution to Highway Engineering 1904-1974*, published in 1997. Contributing to the research for this article was librarian Hank Zaletel, Todd Hansen of Materials and John Cunningham of the Iowa Concrete Paving Association.

**Slipform paver history**, from previous page

To lay concrete the paver was attached to a ready-mix concrete truck, which would discharge its load into the paver, then pull the paver forward. After a few short tests, the machine's performance was deemed satisfactory for use on a public project.



The final Iowa State Highway Commission slipform paver could pave one lane of traffic in a single pass. Circa 1949

### First use of slipform on a public project

In September 1949 the one contract bid received by the Iowa Highway Commission to pave a 20-foot wide, half-mile section of highway through Primghar in northwest Iowa was rejected based on cost. As a result, the Iowa Highway Commission, the O'Brien County Board of Supervisors, and Primghar officials decided to experiment with the new slipform paver. The Iowa Highway Commission had little time to complete the project because it had committed the machine to lay concrete in Cerro Gordo County Oct. 9. Grading of the Primghar road began Sept. 19, paving began Sept. 28 and was finished Oct. 1, well in advance of the Cerro Gordo County project.

The first slipform paving project did not proceed without complications. Because the paver produced a section 10 feet wide, a single lane was created by laying two sections side by side, leaving a three- to four-inch gap between the sections that workers had to fill later. Hairline cracks developed in the surface of the pavement, and engineers worked to diminish the level of cracking.

### Prototype used on three additional public projects

The Iowa Highway Commission used the 1949 prototype machine three more times. In October 1949, as promised, the machine was used in Cerro Gordo County to lay a one-mile section of 20-foot wide pavement (two 10-foot passes) on a county road between U.S. 128 and Iowa 106.

Four years later, the Iowa Highway Commission laid a quarter-mile concrete base with the paver in eastern Iowa on U.S. 30 in Cedar County west of Mechanicsville.

In 1954 the "Jeep Skate," as it had become known, was leased to Raymond Andrews Sr. of Andrews Concrete in Mason City. The lease rate was two cents a square yard to pave a road at Churdan in Greene County. The contractor altered the machine, removing the concrete hopper in front to allow concrete to be dumped directly on grade, much as it is today.

### Slipform paver is commercially manufactured

Despite the fact that two additional miles were scheduled to be paved in Payton with the "Jeep Skate," the Churdan project was its last. By 1955 commercial firms had developed functional slipform pavers. Glen Perkins of the Quad Cities Construction Company produced the full-width Quad City Paver that advanced on crawler tracks, rather than on wheels. The Quad City Construction Company completed approximately 28 miles of slipform paving in Iowa in 1955. That same year highway construction crews in Colorado and Wyoming used the slipform paver, and a commercial need for the technology took hold.

In just a few years, several equipment manufacturers were marketing slipform pavers capable of placing concrete up to four lanes wide. The original "Jeep Skate" was sold to Raymond Andrews Sr., which he later used to pave the Merle Hay Mall parking lot in northwest Des Moines. The paver is presently owned by Raymond Andrews Jr. of Andrews Prestressed Concrete, Inc. in Clear Lake.

**Slipform paver history**, go to next page

Slipform paver history, continued from page 7



The Quad City Paver was in use in 1957 on a paving project approximately three miles west of Iowa 17 near Graettinger.

### Johnson recognized for his contributions

Johnson, who later in his life was referred to as the “father of the slipform paver,” retired from the Iowa Highway Commission in 1966. In New York City on Dec. 12, 1968, he was presented the American Concrete Pavement Association’s first Hartmann Award (now known as the Hartmann-Hirschman Award). The award is reserved exclusively for those who have rendered outstanding service to the concrete pavement industry and to the association. On Feb. 14, 1979, he received the Iowa Concrete Paving Association’s Outstanding Achievement Award for his contributions to the industry during his career at the Iowa Highway Commission.

### Contribution revolutionized highway construction

The slipform paver, which arguably could be Iowa’s greatest contribution to highway construction, significantly impacted the economics and nature of portland cement concrete road construction. In 1949, on a good day, construction crews could lay about 1,000 feet of concrete using fixed forms. Modern slipform pavers are capable of laying pavement in widths of 12 to 50 feet, up to 19 inches thick, at a rate of a mile or more a day.

Over the years, the evolution of the slipform concept and advances in manufacturing technology have provided higher productivity per worker-hour, greater efficiencies in materials usage, less traffic congestion per job, and a more appealing finished product per dollar invested by the public.

### Slipform paver instrumental in building of the interstate

The slipform paving machine was also instrumental in accelerating construction of the greatest road building project in American history—the construction of interstate highways. Without the slipform paver, construction of the interstate could have taken four or five times longer.

The first interstate construction project in Iowa to use the slipform paver was constructed in 1964 on I-80 in Iowa County by the Fred Carlson Company of Decorah.

# Abrams named Design employee of the year for 2005

**H**e's the "go-to" guy. In his 32-year career at the DOT, John Abrams has been counted on to get things done. As the section leader of nine employees in Rural 3, he continues to do whatever it takes to help his people, and their projects, succeed.

"When I started at the DOT, all plans were done manually. I was already in management when we started using computers, so now I learn from my staff," said Abrams. "I like to go into the computer files and help whenever I can."

According to Abrams' nomination form, completed by Design employees Sally Bartlett and Paul Flattery, it's Abrams' timing that also makes him stand out among the 135 employees in the Office of Design. Bartlett says, "John is continually reviewing project deadlines with us to make sure projects are developing on schedule. The nice thing about John is that he'll jump in and help when we need him. There are some people who don't do that."

In addition to the routine work of the section, Abrams has become the DOT's expert on roundabouts. The first of these on the state road system will be let this spring with Abrams' name on the plans.

Although Abrams has been with the DOT more than three decades, he's not afraid to question the status quo. In his nomination, Flattery and Bartlett state, "John is able to determine changes that need to be made to standard road plans, roadway typicals and design practices. He's not afraid to 'stir things up' and create discussion."

Abrams' experience has been very useful to those outside his section as well. He recently helped District 1 staff with a \$1 million patching/resurfacing project in Polk, Story and Hamilton counties which reached completion in six months. For District 2, a



John Abrams

\$750,000 safety project on U.S. 218 near Janesville will be completed in nine months because of Abrams' input. District 5 has recently requested help from Abrams in developing a resurfacing project to be let this spring. Bartlett said, "John was able to complete all this and manage his personnel in such a

way that these projects were completed on time and without interruption of other project schedules. Because of John's extensive history and his knowledge of design, he is able to make quick, intelligent decisions; and is, therefore, able to keep projects moving forward."

The heavy workload in Abrams' section keeps his people on their toes, but his nomination states that John's sense of humor and practical nature make him fun to work for and great to learn from. If you ask Abrams, he says his claim to fame is that he graduated high school with Priscilla Beaulieu Presley in Wiesbaden, Germany, and the two still occasionally chat.

Abrams and his wife, Cheryl, have a very busy life keeping up with their four grown sons and their families. The Abrams' oldest son, Mike, and his wife, Jeanette, have two children and live in Naperville, Ill. Eric is the GIS coordinator at the DOT and lives in Ames with his wife, Amy, and their two children. Chris and his wife, Ann, have just moved to Ankeny with their child and another on the way; and fourth son, Ryan, and his wife, Rocio, live in Charleston, S.C.

# Newton youngsters get a glimpse inside a DOT truck



Name Auti Simms



Dear Ronnie and Josh  
I like your lights  
I like your horns  
I like your shocks  
I like wings

Name Mariah

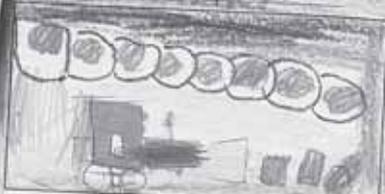


Dear Ronnie thank you for coming to the school we really appreciate it a lot.

Dear Josh thank you for bringing the snow plow to school. We learned a lot that day.

Sincerely,  
Mariah

Name Whitney



Dear Dot I like your trucks and I think you for doing your job and thank you for being us try your trucks.



I liked The-TRUCK  
DOP I liked the DOT truck



*Dear Ronnie Dykstra, Josh Yeager and Newton DOT Office,  
 What a special treat for our kindergarten class here at Emerson Hough to have Ronnie and Josh come and bring their DOT trucks. The children were very excited to see the trucks and also to learn about your jobs. They were very excited Friday and could not stop talking about getting up in the big trucks and hearing the horns honk. It's very hard to keep the attention of kindergartners and you each accomplished keeping their attention. Many of them commented about seeing the DOT trucks on the highway and how they were going to watch to see if one of you was driving.*

*The Iowa maps were a big hit and as we were talking about the Mayflower coming to America, they thought we could look at our map of Iowa we hung in the room and see the route the pilgrims took. What a great connection for our social studies!*

*Thank you so much for coming and sharing what you do each day. I know that it took a great deal of preparation and time to clean the trucks and bring them to our school.*

*We would love to have you come visit our classroom again next year and talk about your jobs, what a great experience for the children.*

*Thanks again for taking time out of your busy schedules to come and visit us.*

*Sincerely,  
 Marla Cory, Kindergarten Teacher  
 Emerson Hough Elementary  
 Newton, IA*

*Dear Ronnie, Josh and Newton DOT office,*

*Thank you so much for coming to Emerson Hough on Friday, Nov. 4, 2005, with two of the DOT trucks. Your presentation was great and provided the students with a great deal of information about your jobs. Thanks also for tying in your presentation to the importance of reading and math in your jobs. The more times we can provide real life reasons for reading and writing the better.*

*The students were very excited to tour the trucks, feel the sand and of course, to honk the horns. The Iowa maps you gave them will help us to practice some real world map skills in class.*

*The children are still talking about your visit and I know that many of them have a greater appreciation of your very important jobs. It is so exciting for students to see firsthand people who love their jobs!*

*Please keep us in mind for a possible visit again next year. You provided a great learning experience for our students! Thanks again for being so giving of your time!*

*Sincerely,  
 Melissa Sommars, 2nd Grade Teacher  
 Emerson Hough Elementary  
 Newton, IA*



## Trophy Case

### Recent DOT Awards

The best at selecting quality services



William Howard of the American Council of Engineering Companies presents the award for the DOT's QBS program to Engineering Bureau Director Mitchell J. Dillavou.

How do we know the engineering firms we hire will perform the highest quality work at a fair and reasonable price? The quality-based selection (QBS) process was initiated 32 years ago to do just that. First put into law by the Brooks Act, the QBS process to procure architectural and engineering services for design contracts with federal design and construction agencies, such as the Federal Highway Administration, sought to assure quality in these professional services. Over the years, 43 states have adopted QBS for all projects, going above and beyond the federal mandate. In Iowa, the DOT has refined the process over the years to become the best in the nation at securing quality professional services.

According to the American Council of Engineering Companies (ACEC) and the National Society of Professional Engineers, the Iowa DOT's QBS program ranked number one in 2004. Mitchell J. Dillavou, director of the Highway Division's Engineering Bureau, accepted the ACEC award at its national convention last April.

## Iowa's safety information system garners national recognition



(From left) J. Richard Capka, acting administrator, Federal Highway Administration; Dr. Michael Pawlovich, Iowa DOT; and Gregory M. Cohen, acting executive director of the Roadway Safety Foundation

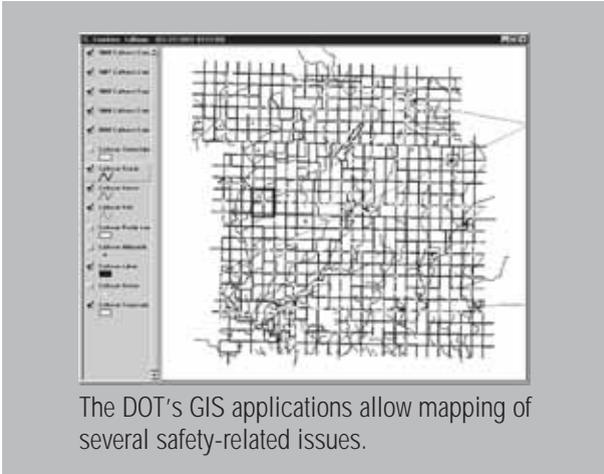
When it comes to traffic safety, making good decisions is a matter of life or death. Over the years, the Iowa DOT's system of crash data and analysis has evolved into one of the best in the nation. Crash data has moved from being used to support the decisions made in regard to traffic safety into an integral part of the decision-making process. Tom Welch of the Office of Traffic and Safety said, "Crash data is the foundation of any safety program. The work done by Drs. Joyce Emery and Michael Pawlovich in developing the DOT's analysis tools is the basis for the success of traffic safety programs in Iowa. We tend to take our ability to analyze crash data for granted in Iowa. But in my opinion, no one else in the country can come close to our system in terms of quality, timeliness and details included in our crash data tools."

The Federal Highway Administration agreed with Welch and recognized our highway safety geographic information system (GIS) with a National Roadway Safety Award at the National Press Club in Washington, D.C., Nov. 15. Of 100 entries, 14 were chosen for this biennial award for roadway safety efforts throughout the country.

### About Iowa's Safety GIS System

In the late 1980s Emery, of the Office of Traffic and Safety, initiated development of crash data analysis tools with available technology. As a graduate student working at Iowa State University's Center for Transportation Research and Education (CTRE) in 1997, Pawlovich further developed Emery's work to include more data and GIS-based analysis tools.

Trophy Case, from previous page



The DOT's GIS applications allow mapping of several safety-related issues.

While still completing his doctorate, Pawlovich brought his talents to the DOT full time and continued to work with Emery on development of the tools that you've read about in INSIDE over the past few years. The GIS-based Safety Analysis, Visualization and Exploration Resource (SAVER) is a robust tool for in-depth crash data analysis. Designed for the more sophisticated user, SAVER allows users to add their own layers to pre-programmed data and produce tabular reports and maps.

The crash-mapping tool, known as CMaT, is a more basic tool. It's easy to distribute, install, learn, and use, and provides analysis based on limited crash data fields. Many city and county safety officials use CMaT to produce crash data maps when presenting information to the public or local authorities.

"We determined at the very beginning that the data needed to be distributed to everyone and be user-oriented," said Emery. "That way local entities wouldn't need to spend the time, money and energy developing their own tools. They can use the tools we provide to analyze their data; and, hopefully, be able to justify changes that need to be made."

"The more we can share data, the more help the data can be," said Pawlovich. "We are an extended team including the Office of Traffic and Safety, Driver Services, Iowa State Patrol, Governor's Traffic Safety Bureau, CTRE, the district traffic technicians, and city and county engineers. Use of these tools has radiated out to many users."

The strength of the system is that it is available to so many people. The data can be shown in a graphic presentation. The data behind the graphics is accurate and timely. "In partnership with CTRE's Iowa Traffic Safety Data Service (ITSDDS), we're able to get these resources into the hands of those who need them to make Iowa roadways safer," said Pawlovich.

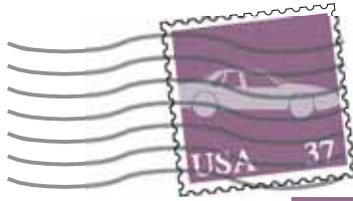
## Steier attends training in England

Investigator Paul Steier with the Office of Motor Vehicle Enforcement is a "chief trainer" for the American Association of Motor Vehicle Administrators' Fraudulent Document Recognition Program. Steier was invited to attend a week-long training session in England on the design, development and production of secure government documents and holograms. This training was provided by De La Rue International, the world's largest commercial security printer and papermaker, which is involved in the production of more than 150 national currencies and 40 national passports.



Training attendees are photographed in front of Tylney Hall Mansion located in Basingstoke, London; Iowa DOT Motor Vehicle Investigator Paul Steier is in the back row, second from the left.

Steier's training consisted of classroom instruction by the United Kingdom Immigration Service Document Fraud Unit and other experts on identification document fraud. Educational tours were given throughout England in a variety of secure document production plants, including holographic and banknote plants. Security was very tight in these facilities with access given only to those who have a need. Some highlights of the tours were: being able to witness cotton and water being formed into paper with security features inserted; watching a laser etch detailed holographic images; observing different types of printing processes; and learning how to differentiate each. Some of the production equipment was even stopped so the students could see the internal workings of the image plates and ink applications. The information and knowledge Steier learned will be a valuable asset to aid in the training of detection of counterfeit identification documents throughout Iowa and the United States.



## Kudos!

*These are letters that have been submitted to the editor. They may have been edited for length and continuity.*

To: **Nancy Richardson**

From: Mrs. Robert Obiala, Tinley Park, Ill

I had to write to let you know how pleased I was with the absolute courtesy and helpfulness of the people in your department. Recently my husband and I were on our way to visit our daughter and her family in Des Moines. Along the way we stopped at a rest area and I left my cell phone in the ladies room. When I discovered it was gone, I was so upset and didn't know what to do first. Our daughter put us in contact with **Steve McMenamain**, who was able to figure out which rest area we visited and then called there to have the attendant look for the phone. They found it, mailed it back to me without delay and didn't hesitate to be of the utmost service. Please know that we really appreciate all that your people did to help us.

(Editor's note: **Steve McMenamain** is the rest area administrator in the Office of Maintenance.)

To: **Rhonda Werneke, Driver Services**

From: Neill Goltz, Grinnell

Thanks so much for rescuing me from my situation at Dollar-Rent-A-Car in Phoenix, Ariz. I didn't know what to do when I showed up there without my driver's license. This looked to be a disastrous business trip. I believe it was "Mike" to whom I originally spoke at the DOT, who must have referred my problem on to you. And you came through for me. In a time when people are impatient and unengaged, it was terrific to have your and Mike's help.

(Editor's note: Apparently Mr. Goltz had misplaced his Iowa driver's license prior to renting a car while on a business trip to Phoenix. Driver Services employees **Mike Willis** and **Rhonda Werneke** were able to verify his identity and fax a temporary license to the rental car agency so Mr. Goltz could complete his trip.)

To: **Commissioner Pat Crawford**

From: Dayna Van Horn, Centerville

A big "Thank You" to everyone at the DOT that helped with getting the sign posted. This will make things so much easier for mom. As I told you, my mother is blind, so through me, she sends her thanks. Everyone in our family is very satisfied with the prompt attention the DOT has given this. You are all so kind!

(Editor's note: This thank you is in response to the efforts of staff in District 5. Ms. Van Horn's mother, Mrs. Barber, lives in Centerville and has lost her sight and depends on a section of roadway directly in front of her house to accept rides from friends and neighbors. Recently, the area has been frequently used for long-term parking, forcing Mrs. Barber to find her way down an unfamiliar street to find her ride. Many of Mrs. Barber's friends who drive her are elderly, and it would be dangerous for them to walk several blocks to Mrs. Barber's house to get her and guide her to the car. The city approved, and the DOT installed, a one-hour parking sign in front of Ms. Van Horn's mother's house to help the area remain clear when the elderly woman needs to be picked up. **Dan Barnhouse** of the Centerville garage coordinated the sign installation with the city. **Larry Jackson**, District 5 engineer, and **Ingrid Ruddy**, District 5 field services coordinator, also assisted in the process of securing the sign for Mrs. Barber.)

To: **Maury White, Williams garage**

From: Mary Beth Kiner, Right of Way

On the morning of Oct. 11, I had a tire on my state vehicle blow out when I was traveling northbound on I-35. I was traveling to northern Iowa for appointments with families who are being relocated for the Iowa 60 project when **Maury White** from the Williams garage came to my rescue. He changed my tire and called ahead to Tony's Tires in Webster City to confirm they could supply me with the size tire that I needed replaced. He also called me back later to make sure I made it to Webster City on the spare donut tire. I want to extend my sincere gratitude to Maury White for being so kind and considerate. Because of his timely efforts, I was able to make all of my scheduled appointments.

(Editor's note: **Maury White** is a mechanic in the Williams garage. **Mary Beth Kiner** is a right-of-way agent 2.)

## Toys for Tots events net more than \$7,500 to make the holidays happier

New ideas were mixed with old favorites to raise money for kids this Christmas in the central complex Toys for Tots fund-raising drive. In total, \$7,538.06 was raised and 306 toys were donated to supply holiday gifts for needy central Iowa kids.

The big draw this year was the compilation of Christmas songs recorded by DOT employees. The 500 CDs were sold out in less than two weeks with \$2,520 raised from this activity alone. The auction of donated items raised \$1,596. Food is always a great fund-raising tool as the rolls, soup lunch, bake sale, and popcorn sales (coupled with the ornament sale) brought in \$1,230.80. Other cash donations, and money from parking spaces sold during the Food Drive and split with Toys for Tots, made up the balance of the drive's funds.

Thanks to Rhonda Andresen for chairing this year's Toys for Tots drive. Also on the committee were Sheri Anderson, Barb Bellizzi, Darla Best, Tracey Bramble, Barb Coon, Melissa Davis-Oviatt, Lori Dittmer, Michelle Fields, Danielle Griggs, Laura Linduski, Miriam Long, Dixie Magden, Cathy Mather, Linda McBride, Susie McCullough, Deanne Popp, Heather Sheehan, Cindy Shipley, Mary Kay Solberg, Vicki Stamper, Maggie Suckow, Patty Valline, Janet Vaughan, Judy Whitney, and Zhaia Wineinger.



Rhonda Andresen (right), chair of the DOT's Toys for Tots campaign, presents the DOT's donation to SSgt. Benjamin Smith (left) from the Marine Corps.



## UPDATE

### Three DOTers home for the holidays... ...while two more serve

Three DOT employees who have been serving our country have recently returned from active duty; two others continue serving our country.

Motor Vehicle Officer **Rick McLain** returned with the 224<sup>th</sup> Engineering in mid-December after 18 months in Iraq. **Kevin Molsberry** returned to work at the DOT Dec. 12 after a year training Iraqi police forces in Mosul and Baghdad. **David May** returned to work Aug. 12, 2005, after a 545-day tour. During that time, May served in Kuwait, Iraq and Haiti.

Our thoughts are still with two DOTers who are currently serving our country. Motor Vehicle Officer **Darrel Wiegand Jr.** has just received orders for another year of duty in Fort Riley, Kan. He has been on active duty since July 2005 and was also deployed in 2003. He is expected to return to the DOT in January 2007. Motor Vehicle Officer **Don Lee** is now on an 18-month tour of duty in Iraq.

This information was gathered from the supervisors of these employees. If you have information on other DOTers who are serving at this time, please contact Tracey Bramble at 515-239-1314 or [tracey.bramble@dot.iowa.gov](mailto:tracey.bramble@dot.iowa.gov) to have the employee recognized in INSIDE.



## One Gift campaign exceeds financial goal

**I**n 2005 there was so much need due to natural disasters in many parts of the country that raising money here at home became a challenge for the more than 400 organizations included in the state's One Gift campaign.

Designed to be a "one stop" opportunity for giving for the state's 21,816 employees, the One Gift campaign sought to raise nearly half a million dollars from Sept. 23 to Oct. 21, 2005. Nearly 4,000 state employees, including 240 DOTers, dug deep in their pockets to meet the challenge in the recent One Gift campaign. The statewide payroll deduction program saw pledges totaling \$569,950.16, well above the \$481,750 goal.

Mary Christy, DOT coordinator for the One Gift campaign, said, "The One Gift campaign was a great success this year. The financial goal was exceeded by more than \$88,000. That money is desperately needed by these charitable organizations. I want to thank all employees who participated, and urge those who didn't participate this year to consider doing so in next year's program."

## Family Happenings

### Motor Vehicle Enforcement Valerie Hunter



Motor Vehicle Officer Darren Reid and his wife, Lindsay, are the proud parents of a son, Owen Matthew. Baby Owen was born Oct. 28, weighing 7 lbs. 9 ozs. and was 19 3/4 inches long. Congratulations to the Reid family!

### District 5 Brenda Hadley



**Mike Thayer**, District 3 engineering technician senior, and his wife, Jennifer, are the parents of a new baby boy, Brettan Michael. Baby Brettan was born at 1:11 a.m. Friday, Dec. 16. He weighed 8 lbs. 3 oz. and was 19 inches long. Brettan's two big sisters, Chanin, 10, and Aleisha, 2, are at home waiting to help with their new baby brother.

## Red Ribbon campaign underway

**T**he Iowa Department of Transportation is again participating in the Project Red Ribbon Campaign conducted by Mothers Against Drunk Driving (MADD). The Polk County MADD Chapter will supply red ribbons for all DOT cars, vans and pickups. Ribbons have been forwarded to each office to tie on the left door handle, outside rear view mirror or antenna of each vehicle as-

signed to a cost center.

DOT employees are also encouraged to participate by tying a red ribbon on their personal vehicles as a reminder not to drink and drive. The red ribbon also shows the vehicle owner has chosen to "make a difference" by joining MADD in this important safety campaign.



# In Memory



**George F. Sisson**, 72, of Hendersonville, N.C., died Nov. 15 of pancreatic cancer. Sisson retired from the DOT in 1998 after 40 years of service. He last served as deputy director of the Engineering Division. He was a member of several organizations including the Four Seasons Rotary Club,

National Society of Professional Engineers, American Civil Engineers, Iowa Engineering Society, Iowa State University Alumni Association, and American Association of State Highway and Transportation Officials. He had served as chairman of the Geometric Design of Highways and Streets (Green Book) for ten years. He worked with Iowa State University's civil engineering department recommending core course requirements. Outside of his professional life, Sisson loved gardening, golf and Yankees baseball.

Sisson is survived by his wife of 49 years, Norma; a daughter, Georgianne Sisson of Mission, Kan.; and a son, Geoffrey Sisson of Chicago, Ill., along with many other relatives and friends.

•

**Larry Davis**, 73, of Bowling Green, Fla., died Nov. 17 following a long and courageous battle with cancer. Davis was a 36-year veteran of the DOT, retiring from the Ottumwa bridge crew in 1990. Davis is survived by his wife, Mary, and their three children: Robert of Ottumwa; Amy of Burlington; and Lisa and her husband, Kerry Keller, of Palm City, Fla. He was preceded in death by his parents, Ben and Valeda Davis, and a daughter, Carrie Jane.

Memorials can be made to Hope Haven Development Center, 3711 Lenox, Burlington, IA 52601, where Amy resides.

•

**Col. William W. Amundson** (Ret.), 82, of La Crosse, Wis., formerly of Sioux City, died Dec. 10. He graduated from Notre Dame University in South Bend, Ind., with honors. He then worked for the city of La Crosse as an assistant city engineer. He served as director of public works for the city of Sioux City for 30 years. While employed as the director, he was recognized as one of the top 10 public works directors in the U.S. and Canada. He came to the DOT in 1987 and worked training engineers in the co-op program until his retirement in 1994.

In his earlier years, Amundson was a bird colonel for the U.S. Army after serving our country in World War II with the 901st Airborne Engineers in the European Theater. He was also a liaison officer for the U.S. Military Academy at West Point. He taught general command and staff schools for the U.S. Armed Forces. He was an avid pilot, belonged to a barbershop quartet and was a member of SPEBSQSA.

Surviving Amundson are his wife, Betty of La Crosse; a daughter, Karina Amundson of West Salem, Wis.; two sons, Bill (Doe) Amundson of Sioux City, and Thomas Amundson of Sparta, Wis.; five grandchildren, a great-grandson, and many other relatives and friends. He was preceded in death by a daughter, Christine Lee and his parents.

•



**Kermit Lee Farrier**, 73, of Ottumwa, died Dec. 19, 2005, at Mercy Hospital in Iowa City. A graduate of Brighton High School in Brighton, Iowa, he worked for 40 years for the DOT in Fairfield, Manchester and Ottumwa. He retired as operations maintenance assistant in 1992. He was a

member of St. Patrick Catholic Church and a past member of Fraternal Order of Eagles Aerie #114.

Farrier is survived by a daughter, Debra (Ron) Norton of Ottumwa; a son, Michael (Lori) Farrier of Ottumwa; three grandchildren, Josh Lord, Heather and Shannon Farrier; a sister, Donna Goss of Cedar Rapids; and a brother, Kenneth Farrier of Brighton. He was preceded in death by his wife, Patricia; an infant sister, Judy Ann Farrier; and two brothers, Keith and Karel.

## SERVICE AWARDS

Information supplied by the Office of Employee Services for January 2006

### 35 years

**Curtis Dale Cox Jr.**, Procurement and Distribution; **Lloyd Doehrmann**, Williamsburg garage; **Elvin Hebner Jr.**, Bridges and Structures; **Doyle Jacobs**, Martensdale garage; **Benjamin Pasker**, Manchester construction.

### 30 Years

**Brian Becker**, Finance; **Steven Mortvedt**, Information Technology Division.

### 25 Years

**Lonnie Lee Ford**, Muscatine garage; **William Guthrie**, Right of Way; **Larry Stepp**, De Soto garage.

### 20 Years

**Delmar Gettler**, District 4 bridge crew; **Steven Holland**, Design; **Lynette Johnson**, Marshalltown construction; **Dennis Perrin**, Marion garage; **Todd Schroeder**, Tipton garage; **Connie Snyder**, Driver Services; **Dan Wichhart**, Creston garage; **Kendall Wiegand**, Urbana garage.

### 15 Years

**Dale Harris**, District 2 materials; **Richard Johnson**, District 4 paint crew; **Dixie Lee Magden**, Document Services; **Kurt Manus**, Design; **Frank Redeker**, District 5 Office; **Constance Redig**, Iowa City DL station; **Frances Ruby**, Transportation Data; **John Shepard**, Maintenance; **Robert Stradley**, Des Moines-north garage; **Amy Sue Tinken**, Design; **Jerry Vanness**, Pacific Junction garage; **Michael Williams**, Ames garage; **Dereeth Wyllie**, Creston construction.

### 10 Years

**Douglas Andrews**, Williams garage; **Fred Burnett**, Bridges and Structures; **Wayne Copeland**, Denison garage; **Kim Gritton**, Driver Services; **Jon McCall**, Mount Pleasant construction; **Cherice Ogg**, Document Services; **Marie Oman**, Cherokee construction; **Darrell Peery**, Newton garage; **Scott Sommers**, Chariton construction; **Barbara Steffen**, Dubuque DL station; **Chin-Ta Tsai**, Location and Environment.

### 5 Years

**David Adkins**, Donnellson garage; **Gwen Ballard**, Right of Way; **Dane Bjugan**, Mason City garage; **Todd Blum**, Avoca garage; **Phillip Brumm**, Osage garage; **Michael Fagen**, Des Moines-north garage; **Larry Forney**, Design; **Edward Greenman**, Right-of-Way; **Daniel Judge**, Boone garage; **Mark Kraayenbrink**, Motor Vehicle Enforcement; **Randall Meyer**, Waverly garage; **Robert Mitchell**, Bridges and Structures; **Hollie Richey**, Right of Way; **Jason Ryan**, Decorah garage; **Virgil Schroeder**, De Witt garage; **David Swanson**, Greenfield garage; **Barry Thede**, Grundy Center garage; **Eugene Welter**, Waterloo garage; **Robert Wortman**, District 3 Office.

# 35 YEARS

Iowa Department of Transportation



**Benjamin Pasker**  
Manchester construction



**Doyle Jacobs**  
Martensdale garage



**Elvin Hebner Jr.**  
Bridges and Structures



**Lloyd Doehrmann**  
Williamsburg garage

*"A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."*

**Sir Winston Churchill**  
(1874-1965)

# PERSONNEL UPDATES

Information supplied by the Office of Employee Services for Oct. 21 to Dec. 1, 2005.

## New Hires

**Mark Christian**, information technology administrator 2, Information Technology Division; **Jeri Culp**, clerk advanced, Motor Carrier Services; **Warren Fiddelke**, equipment operator, Alton garage; **William Gitautis**, equipment operator, Malcom garage; **Steven Hermann**, human resource associate, Employee Services; **Jason Langstraat**, equipment operator, Alton garage; **Mindy Lybarger**, driver's license clerk, Marshalltown DL station; **Gregory Moore**, mechanic, Latimer garage; **Mark Muxfeldt**, construction technician assistant, Design; **Beverly Prescott**, driver's license clerk, Fort Dodge DL station; **Patricio Quiroga**, construction technician assistant, Design; **Samuel Roe**, construction technician assistant, Design; **Courtney Schiebout**, equipment operator, Alton garage; **Stacey Soddors**, equipment operator, Neola garage; **Gary Stephens**, equipment operator, Albia garage.

## Promotions

**Sara Buseman**, from secretary 1, Research and Technology Bureau to human resource associate, Employee Services; **Robert Lehman**, from equipment operator to equipment operator senior, Ames garage; **Connie Velder**, from driver's license clerk senior, Ames DL station to driver's license examiner, Fort Dodge DL station.

## Transfers

**Max Gibson**, equipment operator from De Soto garage to Grimes garage.

## Retirements

None.

## Auger accident, continued from page 3

The doctors say Domeyer will be able to return to 99 percent of his previous activities.

"I just can't believe how this has pulled our shop, and really all the shops in the area, together as a family. When the mail comes, the first cards I open are the ones from the DOT garages. I work with specialized equipment during the spring and summer, and get around to the shops in the area. I got along well with people, but I didn't realize how many friends I had until the cards started coming in. I just feel a sparkle every time I open a card from another shop. They are definitely the ones that get opened first. I didn't realize what a big family the DOT is."

Domeyer's life hung in the balance of a few minutes on Nov. 17. Keeping level heads and working as a team, his coworkers were able to save a life that day. "I can't thank everyone enough," said Domeyer. "I especially want to thank Erich for the way he jumped in to help. He's not at our shop all that much, but he became a part of us that day."

In his understated way, Eggers added, "Chris and I will always have a special bond."



*INSIDE* is developed to help keep all Iowa DOT employees informed about critical issues affecting them, recognize DOT employees for their excellent service, and share interesting aspects in the lives of our coworkers. For more information, contact Tracey Bramble, Office of Media and Marketing Services, 515-239-1314 or e-mail [tracey.bramble@dot.iowa.gov](mailto:tracey.bramble@dot.iowa.gov).

**Nancy Richardson**, Iowa DOT Director

**Tracey Bramble**, Office of Media and Marketing Services, Editor  
**Lynn Purcell**, Office of Media and Marketing Services, Desktop Publisher  
**J. Cory Heintz**, Office of Media and Marketing Services, Photographer  
**Printing Staff**, Office of Document Services, Printing



800 Lincoln Way, Ames, IA 50010 • 515-239-1372.



PLEASE RECYCLE THIS ISSUE

Service Area	Correspondent	Phone
District 1	Kay Ridgway, Des Moines	515-986-5729
District 2	Lu Mohorne, Mason City	641-423-7584
District 3	Mary Beth Banta, Sioux City	712-276-1451
District 4	Marlene Jensen, Atlantic	712-243-3355
District 5	Brenda Hadley, Fairfield	641-472-6142
District 6	Jeanne Heeren, Cedar Rapids	319-364-0235
Bridges and Structures	Judy Whitney, Ames	515-239-1564
Construction	Nancy McMenamin, Ames	515-239-1043
Contracts	Peg Muxfeldt, Ames	515-239-1422
Design	Judy Lensing, Ames	515-239-1469
Director's Staff Division	Lynn Purcell, Ames	515-239-1730
Driver Services	Noralee Warrick, Des Moines	515-237-3153
General Counsel	Sheri Anderson, Ames	515-239-1509
Information Technology Division	Colette Simpson, Ames	515-233-7728
Local Systems	Kathy LaRue, Ames	515-239-1081
Location and Environment	Jean Jesse, Ames	515-239-1225
Maintenance	Cindy Shipley, Ames	515-239-1824
Materials	Dawne Berner, Ames	515-239-1919
Modal and Planning & Programming Divisions	Mary Kay Reimers, Ames	515-239-1661
Motor Carrier Services	Diann McMillen, Des Moines	515-237-3250
Motor Vehicle Enforcement	Val Hunter, Des Moines	515-237-3218
Operations and Finance Division	Janet Kout-Samson, Ames	515-239-1340
Research and Technology Bureau	Phyllis Geer, Ames	515-239-1646
Right-of-Way	Linda Kriegel, Ames	515-239-1135
Traffic and Safety	Linda McBride, Ames	515-239-1557
Vehicle Services	Thelma Huffman, Des Moines	515-237-3182

On the cover: Loading salt into a truck in Manchester

## Salt 101

**W**hatever you call it — salt, rock salt, sodium chloride, NaCl, or halite — it's all the same thing. The manufacture and use of salt is one of the oldest chemical industries, with the origins of salt mining traced back as far as 450 B.C. The world's rock salt is basically all the same, and comes from deposits in dry lake beds, inland marginal seas, and enclosed bays and estuaries in arid regions of the world. At various times in the geologic past, parts of very large



bodies of water (such as the Mediterranean Sea and an old ocean that existed where the Atlantic Ocean is now) evaporated and made enormous deposits of rock salt. These deposits were later buried by marine sediments, but since halite is less dense than the materials that

make up the overlying sediments, the salt beds often "punched up" through the sediments to create dome-like structures. These are now mostly buried by additional sediments and must be mined.

With all the technological advances over the last 50 years, good old salt continues to be one of the main tools to fight snow and ice on roadways. While the preparation and distribution techniques have changed, the use of salt to treat roadways during winter weather evolved in Iowa in the 1950s, and continues today.

### Salt sources and costs

The Iowa DOT receives most of our salt from salt mines in Louisiana or Kansas. The Louisiana salt is shipped up the Mississippi River on barges to terminals and then shipped by truck to garages, while Kansas salt is shipped in via either rail or truck. This season, the Louisiana salt shipments had already been made prior to Hurricane Katrina, so there was no disruption in the supply chain.

Each contract period, there are six or seven salt companies that bid on deliveries to our shops. To keep costs lower, cities and counties can use the Iowa DOT contract to purchase salt for delivery to their locations. Average statewide salt price is approximately \$40 per ton. The Office of Purchasing enters up to 2,000 purchase orders for salt each winter season.

The Iowa DOT typically contracts for approximately 180,000 tons of salt each year, which is about 9,000 semi tractor-trailer loads. All this salt is used to remove snow/ice from approximately 9,400 centerline miles or 24,400 lane miles of roadway. During a typical year, the department uses about seven tons of salt on each lane mile for the season. This calculates to a little less than one-quarter pound per square foot.

Salt brine that is used on the roadway is a simple solution of the rock salt from our salt reserves mixed with plain water to a concentration of 23 percent. At this percentage, the freezing point of salt brine and rock salt is approximately -6 degrees Fahrenheit. Garages have special equipment to mix the rock salt with water to produce the 23 percent solution used on the roads. The cost to produce this solution is approximately 5 cents per gallon, which includes all labor, materials and equipment.

Some people ask, "Can we use ocean water to treat roadways?" According to Dennis Burkheimer, DOT winter operations administrator, "We could use ocean water, but we would have to add more salt to the solution to get it to the ideal mixture. Ocean water contains only about 2.3 percent salt by weight. We would also have to ship the salt water, which would be costly."

### Effectiveness and temperature

Even though salt doesn't freeze until approximately -6 degrees Fahrenheit, the effectiveness of salt diminishes as the temperatures get colder.

Example of melting effectiveness:

One pound of salt will melt this much ice at different temperatures:

30 degrees	46.3 pounds of ice
25 degrees	14.4 pounds of ice
20 degrees	8.6 pounds of ice
15 degrees	6.3 pounds of ice

It takes more than seven times as much salt to melt a pound of ice at 15 degrees as it does at 30 degrees. For this reason, the Iowa DOT recommends straight salt and brine use only when the pavement temperatures are at 15 degrees or higher. At lower temperatures alternate deicers, like calcium chloride or abrasives, are mixed with the salt to help remove snow/ice from the roadway.