

roads bridges transit technology news

Local Transportation Information Center
Iowa State University Engineering Extension Service

March 1985

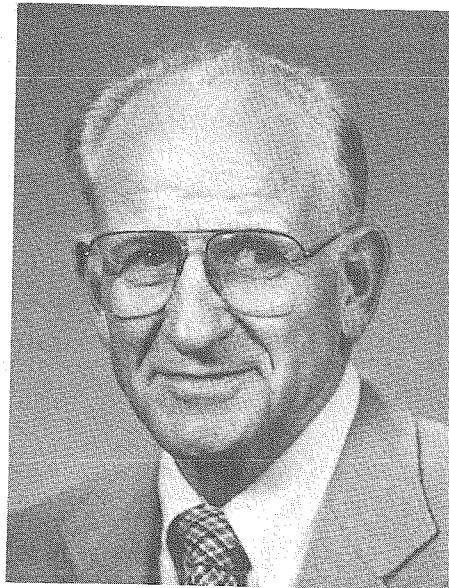
John Moody joins staff

The Local Transportation Information Center is pleased to announce the addition of a new staff member, John Moody.

As program coordinator, Moody's duties will include answering calls on the toll-free Info-Line (1-800-262-8498), offering advice and guidance to those with questions, and traveling to the field, if necessary, to help tackle a problem. He also will coordinate the announcement and distribution of publications and other information of interest to those involved in local transportation.

Moody's role as the Local Transportation Information Center's program

coordinator caps an engineering career spanning three decades. He



graduated from Iowa State College in 1949 with a degree in agricultural engineering, and recently retired after working 33 years for the Iowa Department of Transportation in the areas of construction and maintenance engineering.

Moody will replace Dave Dickinson, who is leaving the position as program coordinator in order to complete his Ph.D. dissertation. Moody will be available on a part-time basis, primarily on Monday, Wednesday, and Friday mornings, to answer your questions and to offer assistance. His experiences have given him a wealth of knowledge that can be a valuable resource for you.

Contract renewal sparks program planning

The Federal Highway Administration has announced that the contract for ISU's Local Transportation Information Center will be continued through 1985. The extension will allow programs and service to continue at the funding level of the past two years.

In order to plan for the coming months' activities, the center's advisory board met on January 23. Board members offered suggestions for workshops and for improving the distribution of technical information.

Workshop topics discussed included bridge and pavement structural maintenance, roadway lighting, and pavement and shoulder maintenance. It was suggested that

popular courses, such as Maintaining Granular Surfaced Roads, be offered at locations outside of Ames.

Other programming suggestions included the use of a van to provide one-to-one technical services throughout the state, the preparation of "how-to" fact sheets, videotaping and audiotaping pertinent workshop sessions, and offering written conference materials to those who could not attend.

Members of the advisory board and the groups they represent are:
APWA Richard L. King, Waterloo;
Lonnie Hawbaker, West Des Moines
ICEA Steve Holcomb, Grundy County;
Gene Hardy, Dallas County

LIM David Long, Des Moines;
William Jay Shreiner, Ankeny
CEC Dennis Snyder, Ankeny
FHWA Roger Port, Ames
Iowa D.O.T. William McCall, J. P. Golinvaux, Lowell Richardson, Larry Jesse, John Whited

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tips from — — — — — the field — — — — —

The hoist trouble light is a creation of the Spencer Public Works Department, developed for use in their maintenance and repair shop.

The apparatus consists of two 4-foot long fluorescent light rods (covered by plastic protector tubes) that are joined to a workbench. One of the lights is attached to a movable overhead arm that swings 270° on its vertical axis and 360° on its horizontal axis. In addition, the entire arm can be raised or lowered to any height the situation demands.

The second light, a stationary vertical light attached to the end of the bench, aids in the illumination of the bench and surrounding work area.

The bench is composed of ¾" plywood with a laminated top, mounted on 1¼" angle iron with castors. The mast arm is made of EMT conduit (¾" for the arm; 1" for the sleeves the arm fits into).

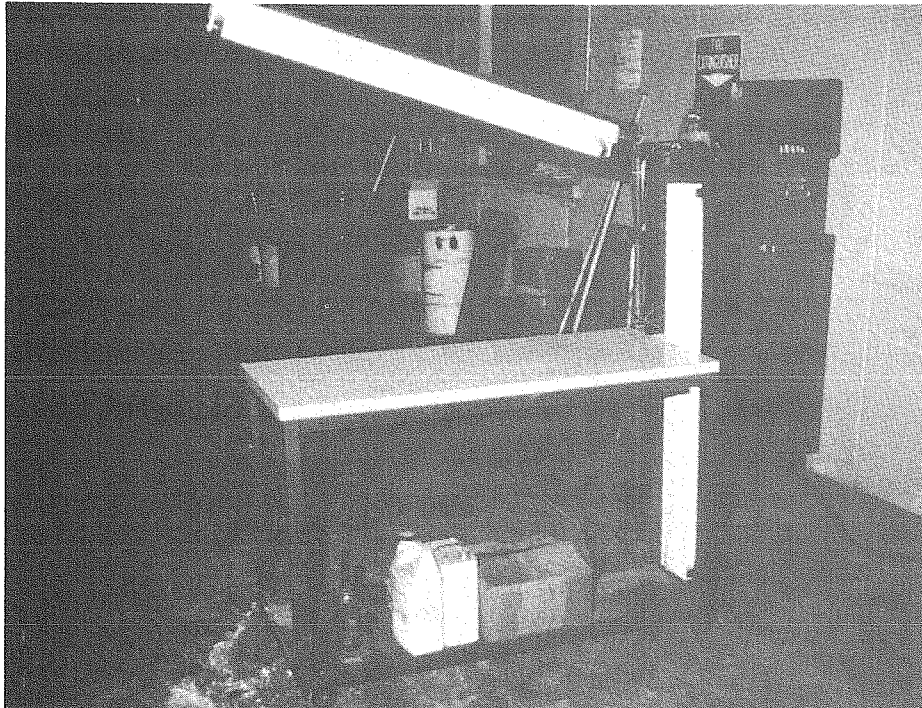
The entire apparatus weighs about 50 pounds. Materials to build it cost \$27.

Maintenance personnel have found the trouble light to be particularly helpful while working under a hoist. Its mobility also proves advantageous when working on tall pieces of equipment, such as loaders, sweepers, and motor graders. The arm can be adjusted to a height that provides light from above, allowing for excellent illumination of the engine and other parts.

For more information contact John Moody, Local Transportation Information Center, Haber Road, Iowa State University, Ames, Iowa 50011; phone 1-800-262-8498; or Chuck Fisher, director of public works, Spencer, Iowa; phone 1-712-262-6456.

If you have a piece of equipment, modification, or an innovative technique that would be beneficial to others involved with local transportation systems, please share it with us. Contact John Moody, Local Transportation Information Center, Engineering Extension Service, Haber Road, ISU, Ames, Iowa 50011.

The mobility of the hoist trouble light makes it helpful in the work area.

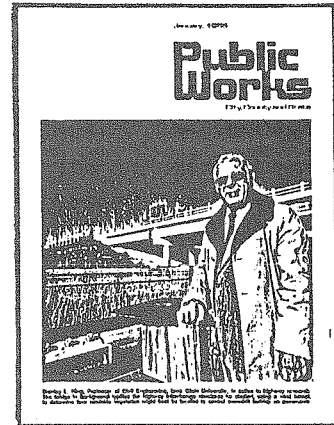


Public Works magazine features Stan Ring

Stan Ring, program manager for the Local Transportation Information Center was featured on the cover of the January issue of *Public Works* magazine.

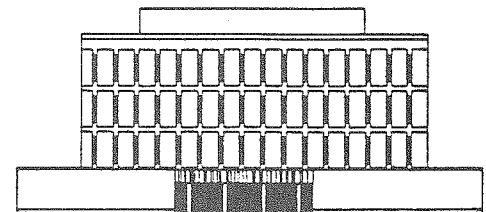
Ring was selected for his research on placement of roadside vegetation to control drifting snow on highway interchanges. A scale model of a highway interchange was tested in ISU's aerospace wind tunnel. Based on the results of the study, recommendations for plant mass locations were presented to the Iowa D.O.T.

Public Works is a national monthly magazine for city, county, and state public works employees.



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Coordinator—John Moody
Editor—Teddi Barron
Editorial assistant—Jodene Berry

civil engineering extension



Pavement

- Aug. '83 Asphalt pavement failure can be avoided
- Dec. '84 Brick-patterned concrete paves Ohio development
- July '84 The economics of seal coating
- Sept. '84 Iowa update on ETP
- Aug. '83 New pavement marking material to be demonstrated in Des Moines
- Dec. '84 Pavement deicer explained at conference (Verglimit)
- May '84 Paving fabrics useful over longitudinal joints or cracks
- May '84 Tested pavement prevents ice formation (Verglimit)

Programs/services

- April '83 A chance to share and work together
- Aug. '83 Info-line update
- April '83 Introducing the Local Transportation Information Center
- Aug. '83 Program promotes rail crossing safety
- March '84 Services available for microcomputer users
- May '84
- June '83 Toll-free Info-line is in operation
- June '83 Traffic engineering consultant service is free
- Dec. '84 We've moved

Publications

- Sept. '84 Better communication enhances public works programs
- May '84 1984-85 extension conference calendar available
- July '84
- Dec. '84 Snow removal audiovisuals available
- Jan. '84 Traffic control device handbook available

Repair

- March '84 Ames tests two patching products
- May '84 D.O.T.'s patch mixture alternatives
- April '83 Pothole patching procedures
- Aug. '83 Pushcart for transporting a plate tamper between pavement patches (Tips from the field)
- March '84 Recirculating crack-filling wand (Tips from the field)
- Nov. '83 Roofing compound works as crack patch
- Jan. '84 Water blasting holds promise for bridge repair
- Dec. '84 Water blasting use spreads
- Jan. '84 Winter pothole patching

Research and Technology

- June '83 Accident data improves safety
- Aug. '83 Appropriate technology: ISU studies low water stream crossings
- Jan. '84 Board oversees highway research
- July '84 Highway research reports released
- March '84 Iowa sports high tech traffic recorder system
- Nov. '83 Iowa's innovative pavement projects viewed by 400

Signing

- Dec. '84 Inventories are better than memories
- Sept. '84 Loss of sign's reflectivity causes fatalities, lawsuit
- May '84 Posted load limits pay off
- Sept. '84 Reduce traffic sign vandalism

Snow

- March '84 D.O.T. recommends less salt
- Dec. '84 Pavement deicer explained at conference (Verglimit)
- Nov. '83 Quick hitch snow plow attachment (Tips from the field)
- Jan. '84 Snow know-how
- Dec. '84 Snow removal audiovisuals available
- Dec. '84 Snow removal policy can reduce liability
- May '84 Tested pavement prevents ice formation (Verglimit)

Transit

- Nov. '83 Buying a van? Figure life cycle cost
- March '84 How to figure LCC for mid-size vehicle purchases
- April '83 Iowa transit regions
- April '83 Public transit assistance available
- Sept. '84 Rural transit publications available

Advice on granular surfaced roads offered

"Planning is the key to maintaining granular surfaced roads," said Ken McNichols, executive producer of the Iowa Limestone Producers' Association, at the Maintaining Granular Surfaced Roads Conference held December 12 at Iowa State University in Ames.

"Plan your work, then work your plan," was the advice he offered the more than 175 participants attending the one-day conference.

A number of other speakers gave practical advice and shared information concerning a range of topics such as dust control, classification and quality of road surfacing materials (including a performance comparison of Class B gravel and Class A crushed stone), public opinion and acceptance of various driving surfaces, operator practices, application determinations, and material specifications.

McNichols warned that the time to be specific about materials is at the time of negotiation. "Don't wait until after the deal is consummated and then complain that you didn't get what you want," he said.

Input into the conference was provided by a variety of groups, including limestone producers, engineers, technicians, and maintenance personnel. It was the first time a conference of this nature has been offered at Iowa State University, and according to conference coordinator Stan Ring, it was very well received.

With the aid of surveys and suggestions from conference participants, it is hoped that the conference can be offered again next fall.

And justice for all

Appointment, promotion, admission, and programs of University Extension at Iowa State University are administered equally to all without regard to race, color, creed, sex, national origin, disability, or age. Call the Affirmative Action Office at 515/294-7612 to report discrimination.

Lime yellow "safer" for fire engines

Painting fire engines lime yellow instead of the traditional red can reduce vehicle accident rates, according to a survey by Dr. Stephen Solomon, a captain with the Owego Volunteer Fire Department, New York.

Solomon studied the crash rates of primary fire vehicles in 9 major cities, and found that the average accident rate for red vehicles was 31.9 per 100,000 emergency runs, compared with 15.3 per 100,000 for lime yellow trucks.

The fire departments studied had more than 750,000 equipment responses over a 12-month period. Ambulances and fire chief cars were excluded from the study.

In an article appearing in the June issue of *Firehouse*, Solomon said a majority of police reported that serious apparatus accidents had occurred at intersections, and that visibility was a key to avoidance in these situations.

In a separate study Solomon also concluded that intersections are two and a half times more dangerous to emergency vehicles than they are to other vehicles. He stated that intersection collisions account for more than two-thirds of all major fire apparatus accidents.

Copies of the reports, "Comparing Accident Rates of Lime Yellow vs. Red: The 'Safety' Color" and "Apparatus Accidents: Causes and Circumstances," by Stephen Solomon, can be obtained by writing P.O. Box 297, Owego, N.Y. 13827.



index of articles

April '83-Dec. '84

Bridges

- June '83 Bridge funding increased
- Dec. '84 Exhibit tells the Brooklyn Bridge story
- Jan. '84 Federal bridge funds for cities
- Sept. '84 40 to 50 percent of all bridges rated substandard
- Jan. '84 Portable bridge maintenance scaffold (Tips from the field)
- Jan. '84 Water blasting holds promise for bridge repair
- Dec. '84 Water blasting use spreads

Cities and towns

- May '84 Combined engineering office saves money in Burlington
- Sept. '84 Des Moines public works department preparing equipment for winter (Tips from the field)
- July '84 Spencer public works department diesel powered equipment (Tips from the field)

D.O.T.

- April '83 Who to call at D.O.T.
- June '83

Economics

- Nov. '83 Buying a van? Figure life cycle cost
- July '84 The economics of seal coating
- March '84 How to figure LCC for mid-size vehicle purchases

Equipment

- May '84 Bosch prisms (Tips from the field)
- Sept. '84 Diesel powered equipment (Tips from the field)
- June '83 Edge rut dresser (Tips from the field)
- Dec. '84 Heim (Tips from the field)
- March '84 Iowa sports high tech traffic recorder system
- Jan. '84 Portable bridge maintenance scaffold (Tips from the field)
- Aug. '83 Pushcart for transporting a plate tamper between pavement patches (Tips from the field)
- Nov. '83 Quick hitch snow plow attachment (Tips from the field)
- March '84 Recirculating crack-filling wand (Tips from the field)
- March '84 Spring maintenance ideas (equipment)
- Jan. '84 Water blasting holds promise for bridge repair
- Dec. '84 Water blasting use spreads

Funding/grants

- June '83 Bridge funding increased
- Sept. '84 Continuing education grants offered for management workshops
- Nov. '83 Continuing education grants offered to city, county employees
- Jan. '84 Federal bridge funds for cities
- Dec. '84 FHWA offers fellowships for graduate study
- March '84 Funding available for road safety and improvement
- June '83 Funding available for new railroad signs
- Sept. '84 New program can fund your training
- April '83 Public transit assistance available

Law/legislature

- April '83 Court ruling implications
- Dec. '84 Inventories are better than memories
- July '84 Lawsuit's message: maintain low-level roads
- Nov. '83 Legislature faces transportation decisions
- Sept. '84 Loss of sign's reflectivity causes fatalities, lawsuit
- July '84 New law improves liability city/county position
- Nov. '83 Rules explained for archaeological findings
- Dec. '84 Snow removal policy can reduce liability
- June '83 Tort claims against cities continue to rise
- May '84 250,000 judgment against county: diagnosing what went wrong



**Transportation
Info-Line**
Call toll-free
1-800-262-8498

In Ames call
294-8815

High-accident intersection leads to large judgment

A right-angle collision occurred at an urban intersection after a southbound vehicle failed to stop for a stop sign. The eastbound driver sustained permanently paralyzing injuries, and lawsuits were filed against both the city and the state as a result of the accident.

Ten allegations of negligence were entered against the defendants; however, the one that developed as the central issue was the specific claim that the city and state were negligent "... in failing to take corrective action to eliminate a hazardous condition existing at the intersection ... when it knew or should have known that a hazardous condition then and there existed."

Two separate trials took place. In the litigation against the city, a district court jury ruled in favor of the city. However, in a second trial, in which the state was the defendant, the court declared negligence and handed down a \$1,200,000 judgment against the state.

The court's decision was based on the fact that 26 other accidents had been recorded at this intersection

during the 4 years preceding the collision. About 60 percent of these involved vehicles from the north that either ran the stop sign or failed to yield from a stop. According to the court, the accident rate of over 4.0 accidents per million entering vehicles should have caused the state to take corrective action. However, there was no evidence that either the city or the state had been more than casually aware that a serious problem existed at this intersection.

The judge also noted that the availability of a computerized accident record system (ALAS) enables government entities to identify high-accident locations and take the necessary corrective measures.

This case clearly demonstrates that it is the responsibility of highway officials to be aware of high-accident locations and to study those sites that are so identified. ALAS printouts provide the basic tool for this process, and responsible officials should establish a practice of regularly seeking this data concerning highways within their jurisdiction. Assistance is available by writing the Office of Driver Services, Iowa De-

partment of Transportation, Lucas State Office Building, Des Moines, Iowa 50319, or by phoning 515-281-4503 or 515-281-5014.

A statistical method for identifying high accident locations has been well documented, but is not widely understood or used. As a rough rule-of-thumb, if the number of accidents exceeds the value of U as calculated by the following equation (for entering volumes up to 10,000 vehicles per day), an intersection might be considered as a high-accident location and subject to further study:

$$U = 0.1 E^{0.6}$$

where U = number of accidents in 3 years and E = number of vehicles per day entering the intersection.

The Local Transportation Information Center staff is available to offer advice and assistance to local jurisdictions in helping to interpret information used in identifying high-accident locations.

R.L. Carstens, professor of civil engineering, ISU.

conference 1 2 3 calendar

For more information on the following conferences, call the Info-Line at 1-800-262-8498.

Fundamentals of Pavement Management

March 12, Storm Lake

April 23, Atlantic

Designed for transportation personnel concerned with street and road maintenance and rehabilitation, this workshop will provide an overview of pavement management concepts, techniques, and applications. Topics include road condition inventories, evaluating needs, setting priorities, and periodic improvement plans.

Bridge Rehabilitation

March 12-14, Lawrence, Kansas

The Transportation Center at the University of Kansas is offering the NHI two-day course on repair and rehabilitation of bridges. For complete information contact Pat Weaver, 913-864-5658.

Bridge and Culvert Hydraulics

April 3-4, Ames

This workshop is designed to give city and county engineers, their assistants, consulting engineers, and technicians a working knowledge of the hydrologic and hydraulic sizing of culverts and bridges. It is a practical "how-to" course emphasizing examples and problem solving.

P.C. and A.C. Pavement Maintenance

April 25, Atlantic

April 26, Storm Lake

Maintenance techniques for Portland

Cement Concrete and Asphaltic Cement pavement will be discussed in this workshop designed for foremen, crew members, supervisors, city clerks, and others who make decisions concerning pavement maintenance practices. Special emphasis will be placed on practical techniques, specifications, and construction procedures to obtain design-life maintenance.

Transportation Resource Management for County and Municipal Officials

May, Omaha area

This workshop will focus on good management practices for transportation. It is designed specifically for local elected officials from small urban and rural areas. FHWA is the sponsor. For more information contact Roger Port, FHWA Iowa Division, Ames, Iowa; 515-233-1664.



for more information

ATSA Guide for Work Area Traffic Control

Available from American Traffic Services Association, Inc., Stafford Executive Building, Route 4, Box 18, Stafford, Virginia 22554; phone 703-659-4122.

This pocket-sized handbook illustrates typical traffic control setups for various work zone situations. Ideal for supervisors, project engineers, foremen, and others who plan or implement traffic control in work areas, this 48-page book contains 27 illustrations with information on the proper use, maintenance, and servicing of devices. The guide is in complete compliance with the federal MUTCD and includes additional "how-to" information.

Turning Vehicle Templates

Available from Transportation Design Techniques Inc., 1603 Orrington Avenue, Suite 1275, Evanston, Illinois 60201.

A new and updated form of turning vehicle templates has been developed for planners, engineers, and architects involved in the design of intersections. The templates are par-

ticularly useful in rehabilitation planning for arterial streets and highways. The set includes 34 templates in standard scales (\$205). Also available in metric scales (\$175).

Microcomputers in Transit: A Hardware Handbook

Available free from the Technology Sharing Program, Office of the Assistant Secretary for Governmental Affairs, U.S. Department of Transportation, Washington, D.C. 20590.

Order # DOT-I-84-46

Enclose a self-addressed mailing label.

This 73-page report is designed to provide the management and staff of small to middle-sized transit operations with an introduction to the hardware components of a microcomputer system. Topics include the functions of each hardware component, characteristics to look for in selecting equipment, and elements of the system itself—including memory, input and output devices, and supporting equipment. The advantages and disadvantages of computer networking are also discussed. A glossary of key terms and

a listing of sources for further information are included. The document assumes no previous knowledge of computers.

Maintenance of Joints and Cracks in Concrete Pavement

Patching Concrete Pavement

Published by the Portland Cement Association

Available free from the Info-Line

These two companion reprints offer excellent descriptions of concrete pavement maintenance practices. **Maintenance of Joints and Cracks** deals with resealing joints, sealing cracks, repairing spalls and spalled joints, and correcting faulted joints by grinding. **Patching Concrete Pavement** addresses full-depth in-place patching, full-depth precast patching, surface patching of jointed pavements, and patching of continuously reinforced concrete pavements.

ISUP 93



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iowa state university, ames, iowa 50011

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Include entire mailing label.