



# MICHIGANITE



SPRING 1983

VOLUME XVIII NUMBER 1

OFFICIAL PUBLICATION OF THE MICHIGAN SECTION OF THE INSTITUTE OF TRANSPORTATION ENGINEERS

## AUSTIN ADDRESSES MEMO TO ITE

### PRESIDENT'S COLUMN



BEAUBIEN

For at least the last fifty years Traffic Engineers have recognized that their profession is a combination of art and engineering. The skills required to be a successful Traffic Engineer go beyond engineering analysis. Skills in communication and knowledge of politics, psychology, management, and salesmanship are also required. The successful Traffic Engineer must also develop his professional artistry.

In "The Reflective Practitioner," Donald Schon, Ford professor of urban studies and education at M.I.T., examines five professions - Engineering, Architecture, Management, Psychotherapy, and Town Planning - to show that most

professionals "know more than they can say"; that to meet the unpredictable situations of their daily work, professionals rely less on formulas learned in graduate school than on a kind of improvisation learned in practice.

The improvisation, or professional artistry, that Schon is talking about is akin to what baseball pitchers call "finding the groove," and jazz musicians call "getting a feel" for the music. We are accustomed to thinking of professionals, especially engineers and other science-based ones, as holders of technical skills and specific knowledge. Schon indicates that the essence of professional knowledge is the ability to, as he puts it, "reflect in action".

Just as a skilled tennis player learns to plan the next shot in the split second between exchanges so, too, do professionals constantly reflect as they take action in their daily work. Schon's point is that this creative ability is vital to individual professional's success and to their collective value to society. Moreover, it is definable process that can and should be taught and encouraged in schools, businesses, and government settings - something that happens only rarely now.

This kind of reflection, wherein professionals evaluate and readjust their frame of reference and thus their view of a problem, is for the most part ignored today in university study in favor of stressing technical skills. Yet this ability is needed more than ever in the professional world. Engineers, for example, are today confronted with an unprecedented "requirement for adaptability". The dilemma of the professional today lies in the fact that both ends of the gap he is expected to bridge with his profession are changing rapidly; the body of knowledge that he must use and the expectations of the society which he must serve.

*Cont. page 15*

TO: Institute of Transportation Engineers  
FROM: Richard H. Austin  
SUBJECT: HOUSE BILL 4203, Mandatory Safety Belt Legislation



**RICHARD H. AUSTIN, SECRETARY OF STATE**

It was most gratifying to learn of the Institute of Transportation Engineer's support for mandatory safety belt legislation for front seat occupants. This represents a commitment in reducing the human tragedy on our highways that is currently the leading cause of accidental death for persons up to age 45.

This issue is not only a death and injury issue, but an economic issue and Michigan cannot afford to ignore a \$100 million annual savings from a safety belt law.

*Cont. page 3*

# STATUS REPORT ON SECTION MEETINGS

by Tom Krycinski

This is the start of a new column in the Michiganite aimed at giving you an update on future section meetings as well as the author's look at past meetings. Our first meeting was held in January in Farmington Hills and saw 51 members in attendance. Our guest speaker was most interesting and Jim Cubera and crew did an excellent job with arrangements. Our second meeting was held last month in Ann Arbor, featuring a light technical session and saw 44 members in attendance. Believe me, I was most pleased with this attendance in view of the lateness with which Lansing and Grand Rapids members received the meeting notice. I apologize for the mechanical failures which caused this and promise you that we are taking steps to prevent it from happening again in the future. Ken Feldt and crew did a superb job with the arrangements. Thanks to both Jim and Ken!

By the time you read this article you should have received your March 24th meeting notice. This meeting features five excellent technical topics with CEU's being offered. It also features our Secretary of State, Richard Austin, as a keynote speaker immediately after lunch. It will be held at the Midway Motor Lodge which Glen Etelamaki advises will provide an excellent meeting facility and meal. A special thanks to Mike Labadie, Technical Committee Chairperson, for the work he's put into both technical agendas.

Ken Shackman is busily making arrangements for our April 28th dinner meeting which will be at the Countryside Inn between Battle Creek and Marshall. Bill Lebel is lining up a speaker to discuss the latest ramifications of the recent federal gas tax increase. The topic should be most interesting and will be aimed predominantly at local levels of government.

Bill Savage and Gerry Carrier are hastily making arrangements for our May 19th Vendors Day meeting in Southfield which always turns out to be interesting. With Bill and Gerrys' talents, how could it turn out different?

Gerry Carrier is also busily arranging for a June 17th Ladies' Night meeting for us. Look for more information in the next issue of your Michiganite.

Also, Tim DeWitt is working on our July 29/30 family weekend to be held at the Mt. Pleasant Holiday Inn again. Jere Meredith has already confirmed our September 8th golf outing date at Saskatoon Golf Course outside of Lowell (remember the water holes, Dwight Hornbeck and Dave Mc Kervey). Last, but not least by far, Stan Cool is already making arrangements for our December 1st annual meeting to be held at the Engineering Society of Detroit.

All in all, it's a pretty ambitious and interesting schedule. I look forward to visiting with all of you again at the upcoming meetings. As always, comments on this column are welcome.



## DID YOU KNOW:

An Engineer is a man who knows a great deal about very little and who goes along earning more and more about less and less until he knows practically everything about nothing.

A Lawyer, on the other hand, is a man who knows very little about many things and keeps learning less and less about more and more, until he knows practically nothing about everything.

A Right of Way man starts out knowing everything about everything, but ends up knowing nothing about anything due to his association with Engineers and Lawyers.

## MICHIGANITE

Official Publication of the  
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### MICHIGAN SECTION ITE, TREASURER'S REPORT

Balance: January 1, 1983	\$2,617.55
Receipts:	
Bank Interest	\$ 35.52
Dues	960.00
January Meeting	474.50
February Meeting	383.00
	<u>\$1,853.02</u>
Expenditures:	
Printing	\$ 140.58
Postage	334.33
Michiganite	544.40
January Meeting	498.36
February Meeting	362.52
	<u>\$1,880.19</u>
Balance: March 4, 1983	\$2,590.38

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MICHIGANITE is published quarterly by the Michigan Section of the Institute of Transportation Engineers. It is distributed to more than 300 ITE members and over 100 cities and counties in Michigan. Address communications regarding the Michiganite to the Editor: Robert V. DeCorte, 7441 Emerson Drive, Canton, MI 48187

## MEMO FROM AUSTIN *Cont. from page 1*

The Michigan Coalition for Safety Belt Use is making an effort to have House Bill 4203 adopted during the current legislative session. There has never been a letter and less painful life and dollar saving opportunity.

In order to make this legislation a reality, legislators need to hear from the ITE membership in support of the legislation. Identified below are some key points to consider when contacting your Representative and Senator:

1. Be clear, brief, specific and courteous.
2. Address your correspondence properly. Know your legislator's full name and the correct spelling.
3. Include your name and address on the letter itself.
4. Use your own words and make the letter personal. It will have more credibility with a legislator if it not a form letter. If you do not wish to write a letter, consider a personal visit or phone call to your legislator urging support.
5. Identify the bill by name and number, HOUSE BILL 4203, mandatory safety belt legislation for front seat passengers.
6. Indicate your reasons for supporting the bill.  
For example:
  - \* Your own personal experience (accidents, close calls, etc.)
  - \* Position or information reflecting the group you represent.
  - \* Approximately 300 lives could be saved a year and thousands of serious injuries reduced.
  - \* Total direct costs to the State of Michigan in 1980 were \$21.5 million (including rehabilitation, Crippled Childrens Fund, Workers Compensation, ADC, welfare, etc.) These are the real infringements on personal rights.
  - \* As the automotive capital, Michigan must lead in automotive safety.
  - \* Safety belt laws have been successful in reducing deaths and injuries in 34 countries and jurisdictions.
  - \* According to Minister of Transportation, James Snow, Ontario has a 60 percent compliance of their mandatory lawn without strict enforcement.
  - \* The bill has a sunset provision. Unless it is reenacted at the end of 3 years, it will automatically expire.
7. Urge passage of the legislation NOW.

### ADDRESSING CORRESPONDENCE:

The Honorable (full name)  
State Senator  
State Capitol  
Lansing, MI 48909

The Honorable (full name)  
State Representative  
State Capitol  
Lansing, MI 48909

Dear Senator (last name):

Dear Representative (last name):

## TRAFFIC ENGINEERING SEMINARS

The Department of Civil Engineering at Wayne State University is once again organizing a series of seminars on Traffic and Safety Engineering for the coming months. Dr. Tapan Datta anticipates that some seven one-day seminars will be presented this year.

Dr. Datta will be contacting potential host agencies in the near future with a questionnaire survey. You may be selected if you can provide twenty participants for the topic(s) of your choice. Naturally, you would be encouraged to invite neighboring communities.

The seminars are supported by a grant through the Michigan Office of Highway Safety Planning and no cost participation is required of the host agencies.

By Gary Holben  
(517) 373-8011  
OHSP

## SEAT BELT LAW WORTH A TRY

I am often humbled to watch and read reports of people being denied what we Americans consider to be inalienable and God-given rights. Freedom of speech and assembly, freedom of religious persuasion, and freedom of choice are things we really take for granted in these United States. Our system is far from perfect, but try to express your dissatisfaction in other countries the way it is often expressed here and you'll be rudely awakened to the real world.

So now the government is tinkering with the idea of a mandatory seat belt bill. My immediate reaction is that such a law could be an infringement upon my rights as a Michigan motorist. I could go off half-cocked because "they" are trying to make decisions for me.

Then I consider the meat of the issue: Do seat belts save lives? Does government have the right to mandate their use? Who is really affected by such a law? What are the life-saving and economic implications?

Arguments for and against seat belt effectiveness must be based on what we know as true. That truth comes from years of hard, cold experience. There will always be isolated instances of people avoiding death or injury by being ejected from their car in a crash. But the facts say your chances of survival are 25 times greater if you let the vehicle's steel frame protect you. On and on, the data says that seat belts save lives--not all lives--but many of them.

Breeze through the Bill of Rights. See anything in there about the right to operate a motor vehicle? Any mention that the state must give you a driver's license and let you go on your merry way? As callous as this may sound, driving in Michigan is a privilege granted by state government. This is the same government that says your kids must be immunized before attending school (you don't fight that one), that says you must drive no faster than 25 mph in your neighborhood (you don't fight that one), that says you must turn your headlights on after dark (you don't fight that one).

Government pays your spouse and family when you're unable to provide for them. Government bails you out when you need medical assistance after an accident. Government picks you up, takes you to the hospital, and pays the tab when you're unable to pay yourself. And when you're talking about "government" picking up the tab, you're talking about you, me, and every other taxpayer in this state. What right do you have to rip off my tax dollars as you refuse to take the reasonable precaution of buckling up?

When our forefathers drafted the constitution and the Bill of Rights, they had in mind a participatory democracy in which each of us has an obligation to contribute to our individual and collective wellbeing. If we are serious about reducing the size and cost of government, then each of us has a responsibility to contribute to that objective. Establishing a public policy requiring safety belt use falls into that category.

Thirty-four countries have seat belt laws. They all work. Why is Michigan unwilling to give our law a try for three years and see if all this life-saving and government cost-saving talk has some merit?

Seat belts aren't the perfect answer, but they're a lot better than nothing at all. They save lives and they save money...yours and mine. We ought to give it a try.

By Philip W. Haseltine



## GALLUP POLL

In late 1981, the Gallup Poll asked people to rate 24 professions and occupations on whether "the honesty and ethical standards" of those in the field are "high, average, or low." The findings:

	High	Average	Low
Clergy . . . . .	63%	28%	6%
Druggists . . . . .	59%	33%	5%
Dentists . . . . .	52%	38%	7%
Doctors . . . . .	50%	38%	10%
<b>ENGINEERS . . . . .</b>	<b>43%</b>	<b>35%</b>	<b>5%</b>
College Teachers . . . . .	45%	36%	8%
Police Officers . . . . .	44%	41%	13%
Bankers . . . . .	39%	47%	10%
TV Reporters, Commentators . . . . .	36%	47%	10%
Newspaper reporters . . . . .	30%	49%	16%
Funeral Directors . . . . .	30%	41%	19%
Lawyers . . . . .	25%	41%	27%
Stockbrokers . . . . .	21%	46%	7%
Senators . . . . .	20%	50%	25%
Business Executive . . . . .	19%	53%	19%
Bldg. Contractors . . . . .	19%	48%	27%
Congressmen . . . . .	15%	47%	32%
Local Officeholders . . . . .	14%	48%	30%
Realtors . . . . .	14%	48%	30%
Laborleaders . . . . .	14%	29%	48%
State Officeholders . . . . .	12%	50%	30%
Insurance Salespeople . . . . .	11%	49%	36%
Advertisers . . . . .	9%	41%	38%
Car Salespeople . . . . .	6%	33%	55%

Reprint from SSITE

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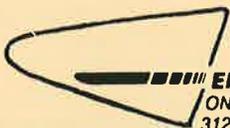
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## PRACTICAL TRAFFIC ENGINEERING: THE PHOENIX WAY

The City of Phoenix Traffic Engineering Department has long been a pioneer in practical traffic engineering.

Several years ago, the City canvassed its entire major/collector street system to try to minimize the number of sign posts in place. The idea was not only to salvage the existing steel channel, but also to eliminate unneeded roadside obstacles, reduce perpetual maintenance costs, and improve the aesthetic appearance of city streets.

The program resulted in the removal of over 3,000 sign posts with a value of approximately \$35,000. The steel sign posts were salvaged as a result of three concurrent efforts. They were:

1. Removal of signs no longer needed.
2. Co-mounting needed signs with other nearby signs.
3. Maximizing use of nearby steel utility poles.

The current program focuses on the same three methods of sign post removal listed above, but also uses an innovative new method of fastening traffic signs to wooden utility poles. The City initiated the concept of "flex" signs, which has made wooden utility poles more usable for sign mounting purposes. Approximately 20% of the City's utility poles are wooden, and for years utility companies have forbidden the mounting of traffic control devices. The traffic signs in their judgment would interfere with, and impose potential injury to, the climbers. Several alternate designs of "flexible" signs were tried which not only would curve around the poles, but which could be penetrated by the spikes used by climbers. The sign material now in use is a nylon mesh material that costs only 10¢ per square foot compared to the \$1.30 per square foot cost of aluminum. The ink is still screened onto the reflective sheeting to give the signs reflective characteristics. However, once the screening process is completed, the reflective sheeting is baked in vacuum applicators to adhere the reflective material to the mesh material. Once the sign manufacturing process is complete, the sign is directly adhered to wooden poles using an adhesive material.

Sign post reduction benefits Phoenix in that it saves money, reduces maintenance, and improves safety. In fiscal year 1982 alone it is estimated the City of Phoenix will save between \$70,000 and \$80,000.

By James W. Sparks  
ITE Journal

## CONGRESS CURBS NHTSA BELT-USE PROGRAM

Congress has directed the National Highway Traffic Safety Administration (NHTSA) to refrain from spending any more funds on the agency's belt-use campaign until certain conditions are met.

Two conditions that must be met before further expenditures can be undertaken are:

NHTSA must develop a program plan which specifies what rate of seat belt usage it expects to achieve and when. It must also estimate how much it will cost to maintain belt use at that rate.

There must be a government-wide mandatory safety belt use policy for federal employees to set an example for private sector organizations.

In floor debate on the measure, Rep. John Dingell, Chairman of the House Energy and Commerce Committee, said he also was concerned about the cost-effectiveness of the belt-use program. Nonetheless, he said, he was also concerned that the report indicates that both the House and Senate appropriations committees have to approve NHTSA's written submissions before the agency has the power to obligate additional funds for the program. "Committee approval of this nature is akin to a committee veto which, I note, is not a recognized practice under the Constitution and House rules," Dingell said.

Reprinted from Status Report

# FORMATION OF COMPUTER USERS GROUP IN GEORGIA FOR TRANSPORTATION ENGINEERS

Microcomputers in Transportation Engineering (MITE) is the name of the new organization formed by Georgia traffic engineering agencies. The group is an association of users, and is designed to facilitate idea exchange and advance the use of microcomputers in the field.

All current members utilize the Apple II Plus computer, most purchased with monies from the Georgia Office of Highway Safety (GOHS). Future programs in transportation engineering will be developed by the group with funding from GOHS.

Membership is open to all agencies, public and private, which use microcomputers in the profession. Each agency has one vote and designates a delegate and alternate to cast that vote. Current dues are \$20 per year. Corresponding (non-voting) memberships for those outside Georgia wishing to receive the monthly newsletters are also \$20 per year.

Meetings are to be held quarterly. Regular features of the meetings and newsletter will be reviews of commercial hardware and software, problem/solution exchange, program development, program updates for McTrans, and tips on programming. Initial programming efforts are in the areas of accident analysis, signal timing, and inventory systems. Revision and improvement of McTrans programs with the University of Florida will be ongoing project.

MACON, GA 11/18/82: Tinsel town celebrates the birth of a new darling with the formation of Microcomputers in Traffic Engineering, known by the acronym MITE (pronounce Mi'tee). The twenty proud fathers in attendance all shared in the merriment. The Governor's Office of Highway Safety was named godfather, and the Federal Highway Administration and favorite uncle.

The toddler's name was initially given as MicroTrans, but that name was already taken. The change in name confused the child, but at this young age he will soon forget all about it. His first steps were taken the next day, as discussion centered on selecting the proper schools for him to attend. As a symbolic gesture, it was determined that a public education would be appropriate.

Much is expected of the child, born after only a seven month gestation. His success in life rests with the care of the parents.

Persons interested in learning more should contact AL BUTLER, President, 2795 Lexington Road, Athens, Georgia 30605, (404)546-8330.  
Reprint from SSITE

## 6TH ANNUAL PRODUCT TECHNICAL SESSION CITY OF SOUTHFIELD, D.P.S. GARAGE

Circle May 19 on your calendar and plan to attend this years Product Technical Session which should be bigger and better than ever.

Last year 16 vendors displayed their products at one of our best sessions to date. This year more vendors are expected and a larger crowd should be there because city and county officials, purchasing agents and parking administrators are being invited, in addition to the membership of I.T.E. & I.M.S.A.

Plan on joining us and see the latest developments, equipment and materials in the following areas:

Signal Heads	Signal Controls	Time Base Coordinators
Signs	Impact Attenuators	Signal Pre-emption Equipment
Reflective Sheeting	Parking lot Control	Maintaining Traffic Devices
Sign Posts	Parking Meters	Pavement Marking Paints
Sign Fasteners	Traffic Counters	Thermo Plastic Markings
Hydraulic Equipment	Pavement Markings	Plastic Pavement Markings

### PRODUCT TECHNICAL SESSION AGENDA MAY 19, 1983

2:00 - Product Session

5:30 - Hospitality Hour at "World Headquarters AMC Corp."

6:30 - Dinner at "Merrick's Restaurant" (AMC)

## O.C.C.C. TECH MEETING

Oakland County Community College, Orchard Ridge Campus, was the site of the January 27, 1983, section meeting. Lunch was provided by the advanced students in the Culinary Arts Program.

Dr. Albert King, Director Bioengineering Center at Wayne State University, was the guest speaker. His talk was entitled: Computer and Experimental Simulation of Automotive Impacts. Examples illustrating the combined use of computer modelling and experimental tests were presented to demonstrate the complementary role played by these techniques in automotive safety research. Laboratory simulation of vehicle-pedestrian impact was duplicated mathematically using a computer program called the Calspan 3-D crash victim simulator. Volunteer and cadaver data were used to design a spine for an automotive test dummy to render it more human-like in response. A computer program for kinematic linkages was used to accomplish this task. Dr. King pointed out the safety precautions taken when using volunteers. The background, obstacles overcome, public reaction, and experimental difficulties in using cadaver for research were also discussed.

Some new injury data on neck tolerance to frontal impact were discussed in the light of how the forces causing neck fracture were computed from head acceleration data taken during crash simulations.

The host for this very informative meeting was Mr. James Cubera of the city of Farmington Hills.

## THE ALL-RED SCRAMBLE

The SCRAMBLE system, an all-red signal that allows pedestrians to cross an intersection in all directions at once, saves time for walkers, but wastes gas for motorists, according to the Honeywell Traffic Management Center, Minneapolis, Minnesota. The center reports that the system can reduce an auto's mpg by 13 percent and slow traffic by 160 to 820 percent, depending on how many cars are making turns.

## POSITIVELY NEGATIVE

We drank for joy and became miserable.  
 We drank for sociability and became argumentative.  
 We drank for sophistication and became obnoxious.  
 We drank for friendship and made enemies.  
 We drank for sleep and awakened exhausted.  
 We drank for strength and felt weak.  
 We drank to feel exhilaration and ended up depressed.  
 We drank for "medicinal purposes" and acquired health problems.  
 We drank to get calmed down and ended up with the shakes.  
 We drank for confidence and became afraid.  
 We drank to make conversation flow more easily and the words came out slurred and incoherent.  
 We drank to diminish our problems and saw them multiply.  
 We drank to feel heavenly and ended up feeling like hell.  
 We drank to cope with life and invited death.  
 Anonymous

## NEW BRAKING RULES FOR SLIPPERY ROADS

It pays to anticipate problems on the road, and slippery surfaces are perhaps the most common. Most drivers have been brought up on the advice that "pumping" the brakes" was the way to stop safely on wet and slippery roads. Not any more.

With the advent of disc brakes, that old adage has gone the way of the running board. The difference is that disc brakes don't release as quickly as the old drum brakes were used to. Result: when you pump disc brakes, there's a good chance they may not release at all. They all too often lock, and control of the car is out of your hands.

Instead of pumping, squeeze your brakes with a slow, steady pressure. Just before they reach the point of locking the wheels, ease up on the pedal until your car's wheels are rolling easily again. Then repeat the procedure.

Instinct may tell you to "hit the brakes," but now you know better, right?  
 Reprinted from The Road Ahead (Dec. 1982)

THE ONE WHO DRIVES WHEN HE'S BEEN DRINKING, DEPENDS ON YOU TO DO HIS THINKING.

## 1983 MEETING SCHEDULE

<u>Date</u>	<u>Location</u>	<u>Host</u>	<u>Event</u>
April 22-24	Toronto, Canada	ASCE	Joint ASCE/ITE
April 28	Battle Creek	Shackman	Dinner Meeting
May 19	Southfield	Savage/Roger Smith	Vendors Day
<del>June 17</del>	Livonia	Carrier	Ladies Night (DRC)
MAY 6	Mt. Pleasant	Tim DeWitt	Tech./Family Weekend
July 29-30	London, England	National	Annual Meeting
August 14-15	Lowell (Saskatoon)	Jere Meredith	Golf Outing
September 8	Dearborn	Joe Marson	District III Meeting
September 29-30	Engineering Society of Detroit	Cool/Richardson	Annual Meeting/ Tech. Session
December 1			

NOTE: THE DATE FOR LADIES NIGHT HAS BEEN CHANGED FROM JUNE 17 TO MAY 6.

## SPEAKER'S BUREAU AVAILABLE

Did you know that 1,589 men, women and children perished on Michigan highways last year? And did you know that another 136,455 were injured, many permanently, that same year?

In addition to the pain and suffering, broken homes and wrecked lives, the dollar cost of these deaths and injuries is stressing state, local and personal finances.

Yet, there is something that could cut serious injuries by 50 percent and deaths by 20 percent -- at no cost to motorists. That something is a safety belt.

Mandatory safety belt legislation has never been tried in the United States. To promote such a law, the Michigan Coalition for Safety Belt Use has been formed. The 90 member roster includes medical and health groups, auto companies, governmental agencies, insurance companies, safety organizations and many others.

If you're looking for an informative, lively -- and possibly controversial program, contact the Speaker's Bureau at 517/487-8811. (The Michigan Coalition for Safety Belt Use address is 122 South Grand Avenue, Suite 215, Lansing, MI, 48933).

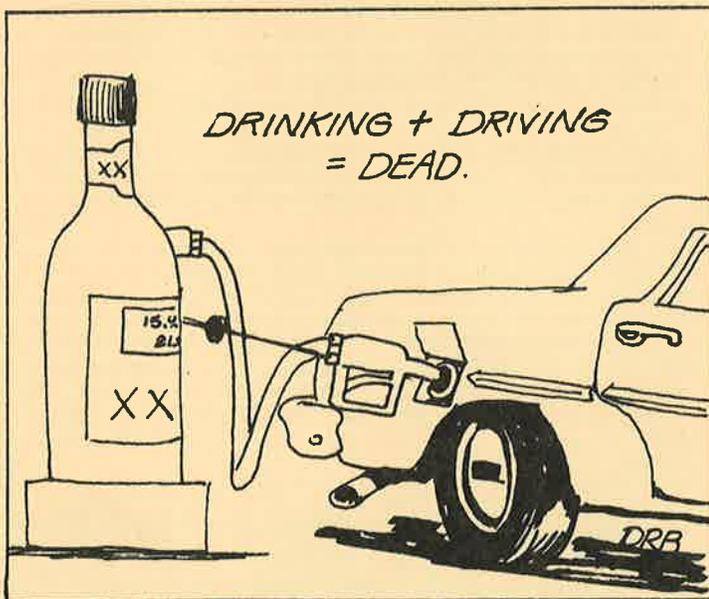
By: Ann Johnson, S.O.S.

## 2.5 MPH BUMPER RULE BENEFITS ARE FOUND TO BE 'FICTION'

Weaker bumper systems now permitted by the rollback of the federal bumper standard from 5 to 2.5 mph show that assumptions on which the change were based were wrong, the Insurance Institute for Highway Safety has told federal officials.

The Institute reported that analysis of several 1983 model cars revealed that projected savings in bumper weights and costs have not materialized as the result of rolling back the 5 mph bumper standard.

Several Chrysler products are now appearing in dealers' showrooms with the new, weaker bumper systems along with the same models that carry stronger bumpers of the type mandated by the 5 mph standard. Despite NHTSA predictions that the new bumpers would produce cost savings, and despite Chrysler's projection of "at least \$35" savings per car by abandoning the stronger bumpers, the Institute found that 1983 model Plymouth Horizon and Dodge Omni models were priced the same, regardless of which bumper system they carried. Reprinted from Status Report



## NEW ROAD DESIGN REDUCES ACCIDENTS

In 1980, the cooperative efforts of the City of Troy, the Oakland County Road Commission, the Michigan Department of Transportation, and the Federal Highway Administration resulted in the reconstruction of 2.7 miles of Big Beaver Road, from west of Coolidge to east of Livernois, in Troy, Michigan. Prior to 1980, this section of Big Beaver Road varied in width from 2 lanes to 5 lanes. The section to be improved had daily traffic volumes as high as 31,000 and included two major intersections and an interstate interchange. These conflict points and the traffic conflicts from adjacent commercial and office development contributed to an accident experience of over 300 accidents per year. Accident reduction, therefore, was one of the primary reasons for the reconstruction of Big Beaver Road. The new cross section of Big Beaver Road provided for 4 lanes of moving traffic separated by a center median. Direct left turns at major intersections were prohibited, and these turning movements were handled through median openings.

To evaluate the effectiveness of this new design in reducing accidents, we compared the accident experience for this 2.7 mile section before and after construction in 1980. As indicated in the table below, this section of Big Beaver Road was the site of over 300 accidents in both 1978 and 1979. In 1981, one year after construction, accidents were reduced to 221. The accident experience for the first half of 1982 confirms this trend toward lower accident experience - approximately 220 accidents per year.

BIG BEAVER ROAD, CASWELL TO FRANKTON

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982 (1/2)</u>
FATAL ACCIDENTS	2	2	0	1	0
INJURY ACCIDENTS	110	97	98	70	43
PROPERTY DAMAGE ACCIDENTS	219	203	182	150	66
TOTAL ACCIDENTS	331	302	280	221	109

ACCIDENT COST \$1,395,380 \$1,285,460 \$891,240 \$847,000 \$376,920

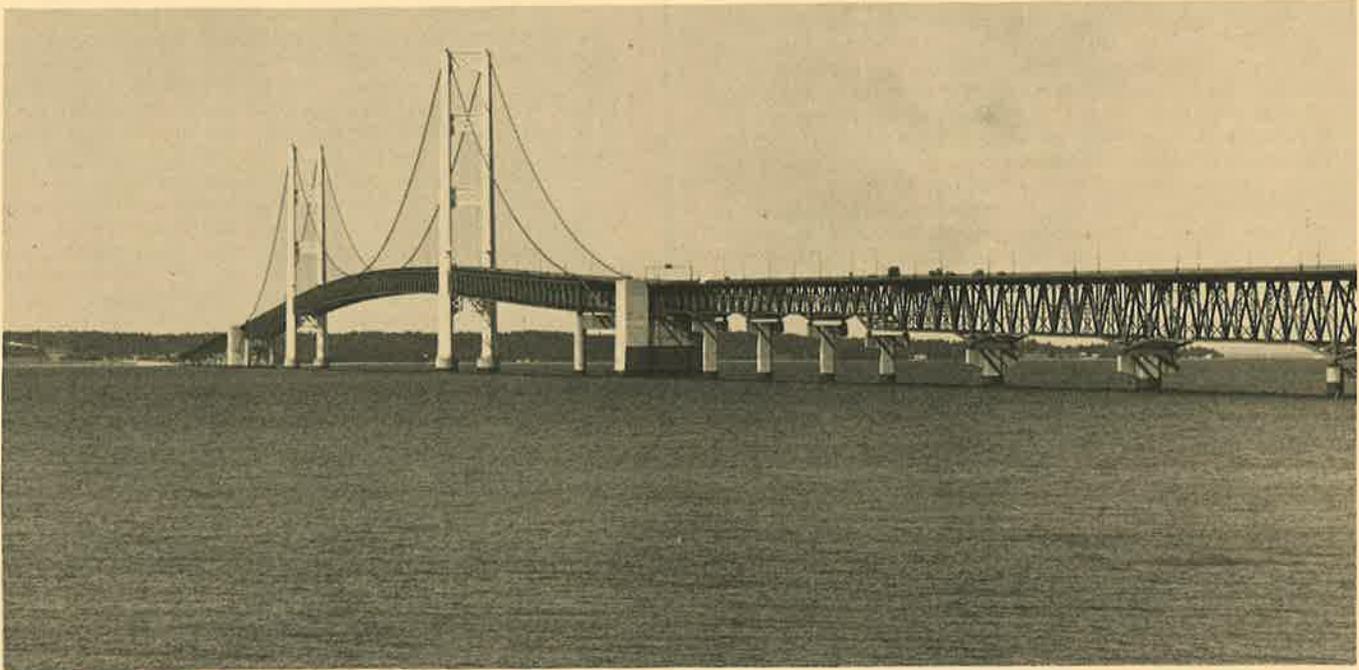
Using the National Safety Council figures for the cost of an accident, we have computed the accident cost for this section of Big Beaver for the years 1978 through the first half of 1982. The National Safety Council estimates that a fatal accident results in the cost of \$190,000, a personal injury accident \$7,200, and a property damage accident \$1,020. For the years 1978 and 1979, the two years preceding construction, we found the average annual accident cost for this section of Big Beaver to be \$1.34 million. This compares with an accident cost of \$847,000 for 1981, the year immediately following construction. Therefore, the savings resulting from reduced accidents amounts to approximately \$500,000 per year.

The estimated savings of \$500,000 per year does not, of course, include the savings of reduced energy consumption which result from a smoother traffic flow, with fewer stops. Reductions in pollutants and lost time have also been left out of this analysis. If we consider only the accident savings, we find that the \$5.2 million cost for the project (\$3.5 million for construction and \$1.7 million for right-of-way acquisition) would be repaid in a ten year period. The design life of the new roadway is estimated to be 20 years.

It should be noted that daily traffic volumes on Big Beaver at Troy Center Drive (approximately the center of the project area) increased from approximately 31,000 in 1977 to 37,000 in 1982. This makes the accident reduction experience even more impressive, because the absolute number of accidents decreased in spite of an increase in traffic volume.

By Richard F. Beaubien, P.E.

# HOLY MACKINAC! *The story of the Mackinac Bridge* (Continued)



**EDITOR'S NOTE:** The 25th anniversary of the Mackinac Bridge occurred on November 1, 1982. The following is the conclusion of a two part article on the bridge's history. The first part was printed in the winter issue of the Michiganite. The account originally appeared in the October issue of the MDOT HI-LIGHTER and was written by Lawrence A. Rubin, executive secretary of the Mackinac Bridge Authority since it was established in 1950 until his retirement this year. The first part of the account discussed the history of the Straits of Mackinac and early efforts to build a bridge. A Blue Ribbon committee established by Governor Williams reported in 1951 that a bridge could be built and financed with revenue bonds. The Korean war delayed efforts to obtain the necessary legislation to finance and build the bridge. The second part of the account begins at this point.

## SALT CAVERNS

In the meantime, a University of Michigan geologist made public his opinion that there were uncollapsed salt caverns under the Straits and that if the huge foundations required by the bridge were built upon them, they would crumble. To refute this allegation, the Authority retained Dr. C. P. Berkey, an engineering-geologist consultant of national reknown. He reported that the salt caverns had collapsed thousands of years ago; that the material under the Straits had consolidated, and that it could safely support the foundations.

The critical steel situation eased early in 1952. The Authority then requested the Legislature to empower it to finance, build, operate, and maintain a bridge across the Straits. The Legislature finally passed the bill but appropriated exactly one dollar to the Authority to do its job.

The original legislation creating the Authority prohibited any of the three consultants hired for feasibility studies from acting as the final designer of the bridge. The obvious reason was to preclude a favorable report with the aim of obtaining a lucrative design fee. However, when the enabling legislation was passed in 1952, the prohibition was eliminated. It was realized that eliminating any of the advisory engineers would rule out the best consulting engineering counsel available.

## DR. STEINMAN'S RISK

Immediately after the passage of the enabling legislation came the problem of selecting the bridge designer. The engineering committee of the Authority responsible for recommending the design engineer was

comprised of three members, two of whom were vigorously opposed to each other's favorite. To further complicate matters, the Authority had no money with which to pay a consultant. In due course, the members began to lean toward one of the original three advisors, but his firm demanded more than \$1 million up front as a portion of the fee.

Another of the three advisory engineers, who had more faith in the project, offered to provide the Authority with preliminary plans sufficient for bidding purposes with his fee contingent upon successful financing. Thus, it was that the Authority retained Dr. David B. Steinman of New York City, whose generosity and willingness to risk his own resources stood the Authority in good stead and marked him as one of the men to whom the people of Michigan should be forever grateful.

## FINDING THE FINANCING

Now it was time to find the financing to construct the bridge. It was not an easy task. Most underwriters showed little interest in the project and one asserted that the single dollar appropriated to the Authority by the Legislature was perceived as a lack of faith in the state where the bridge was to be built. He suggested the Authority ask the Legislature to make available the nearly \$500,000 the state was spending each year for maintenance of the ferry service across the Straits. That was done, despite considerable opposition from legislative leaders, but the \$417,000 annual appropriation was to be contingent upon actual construction of the bridge and completion of the financing by December 31, 1953.

One obstacle succeeded another; then James Abrams of Allen & Company of New York came up with a proposal to break the financing into two parts. There would be \$79,800,000 of Series A bonds, with a four percent interest rate having a first lien on fare revenues, and \$20 million of Series B bonds with a five-and-a-quarter-percent interest rate and a second lien on revenues. At the time, those rates were substantially higher than the interest paid on other toll facility revenue bond issues.

After much soul searching, Authority members decided to go along with the proposition. Abrams bought the bonds for his syndicate on December 15, only about two weeks ahead of the Legislature's deadline. Two months later, on February 18, 1954, he turned over a cashier's check to the Authority in the amount of \$96,440,033.33. The remaining \$3.36 million covered the commission for syndicating and selling the bonds.

Dr. Steinman and his associates, a firm with world-wide experience in bridge design, had conceived for the Straits of Mackinac a bridge of great strength and rare beauty. It was to be the world's largest suspension bridge, a record that still stands in the distance between anchorages--8,344 feet. The total length, including approaches, would be five miles. Its two great towers would rise 552 feet above the straits and the tower piers would be built to a depth of 210 feet below water. The underclearance for ships in the center of the suspension span would be 155 feet. With a critical wind velocity of infinity, it represented an aerodynamic stability never before attained in a suspension bridge.

#### BREAKING GROUND

Contracts which had been awarded to Merritt-Chapman & Scott and to the American Bridge Division of U.S. Steel Corp. on a contingency basis were promptly activated. Precise surveys began in March and floating equipment was assembled for construction. Official groundbreaking took place on both sides of the Straits May 6 and 7. Construction of one of the world's great bridges was finally under way.

Work continued until the first winter shutdown in mid-January, resumed when the weather allowed and continued on that basis for three more construction seasons. It was a difficult and often dangerous construction effort.

#### OVERCOMING HARDSHIPS

But the crews overcame the hardships of water and weather, once encountering a November storm with blasts of 76 miles an hour.

Some 10,000 men worked on the project, about 2,500 at the bridge site and 7,500 at quarries, shops and mills and other sources which supplied the necessary materials. Five bridge workers lost their lives in accidents.

The bridge was scheduled to be open to traffic 42 months after work began, and so it was, on November 1, 1957. On the same day, the state-owned fleet of ferries went out of business forever after carrying some 12 million passengers across the Straits.

Since the opening of the bridge, there have been minor financial problems, but none unmanageable. Diminishing traffic in the years immediately following the opening forced the Authority to increase fares in 1960 for passenger cars from \$3.25 to \$3.50 and then to \$3.75.

The increases were very unpopular, especially in the areas surrounding the bridge. They did, however, improve the solvency of the project and bond redemption began in 1965. In 1968, the Legislature passed a bill reducing fares by 60 percent, from \$3.75 to \$1.50 for passenger cars and correspondingly lower for other vehicles. In return, the Authority receives a \$3.5 million annual appropriation from the Michigan Transportation Fund. The law took effect January 1, 1969.

#### AUTHORITY SUCCESSFUL

During the first year of fare reduction, bridge traffic increased 22 percent. Thereafter, annual increases have averaged about four percent. Total traffic in the first 25 years of operation topped 45 million vehicles.

The end of 1982 marks the retirement of all Series A bonds, totaling \$79.8 million. The remaining \$20 million of Series B bonds should be called by the end of 1986. At that time, the Legislature will determine what the fares will be; and the Michigan Department of Transportation will take over jurisdiction of the bridge. The Mackinac Bridge Authority will have, at long last, successfully carried out its responsibilities and be dissolved.

## NATIONAL SIGNAL TIMING OPTIMIZATION PROJECT PROJECT EXECUTIVE SUMMARY

### Background of the Project

The National Signal Timing Optimization Project was initiated by the Federal Highway Administration (FHWA) as a fuel conservation effort in response to the fact that 35 percent of the total United States daily oil consumption is still supplied by foreign sources, and that our import bill for this oil will reach an estimated \$65 billion in 1981. The Project is part of an overall effort on the part of FHWA to encourage States and municipalities to undertake traffic signal timing optimization projects to improve the quality of urban driving and thereby reduce fuel consumption.

It is estimated that approximately one-fifth of the total daily U.S. oil consumption is accounted for by fuel consumed driving in urban areas through signalized intersections. A significant portion of this is wasted due to poor traffic signal timing. Improving traffic signal timing will improve the quality of traffic flow 24 hours per day, 7 days per week with no sacrifice required on the part of the individual.

If the signal operation at all of the estimated 240,000 signalized intersections nationwide was modernized and the signals were operated properly, an estimated 5 million gallons of gasoline per day could be conserved. It takes 240,000 barrels of oil to produce this much gasoline. Optimizing the signal timing at the 130,000 intersections nationwide which are part of coordinated signal systems and at most of the other non-coordinated signalized intersections would conserve about 2 million gallons of gasoline per day. It takes 100,000 barrels of oil to produce this much gasoline.

Traffic signal timing optimization is also extraordinarily cost effective. It has been estimated that 10 to 15 gallons of fuel can be saved per project dollar invested. Assuming that gasoline costs \$1.35 per gallon, this translates to a benefit/cost ratio, on average, of over 15 to 1 considering fuel savings only.

FHWA's goal is to assist cities and States to develop optimal signal timing plans for all of the coordinated signals and most of the non-coordinated signals in the U.S. over the next four years. This will be just the beginning of an ongoing effort since traffic signal timing plans become inefficient in a year or two due to constantly changing and/or growing traffic demands.

The National Signal Timing Optimization Project, as an initial part of this overall effort, was intended to satisfy the following objectives:

1. To establish credible data on the effectiveness of signal timing optimization.
2. To define the resources (cost, level of staff, computer) required to undertake a signal timing optimization project, such that decision-makers can more effectively budget for this activity.

In order to accomplish these objectives, the following activities were undertaken:

1. Development of the TRANSYT-7F signal timing optimization program and provision of training in its use.
2. Application of the program in 11 cities nationwide to evaluate the effectiveness of the optimized signal timing plans and to collect data on the needed resources.

### Development of the TRANSYT-7F Program

The acronym TRANSYT stands for TRAFFIC NETWORK STUDY Tool. TRANSYT is a tool for traffic engineers who desire to optimize their coordinated signal systems to reduce delay, stops, and fuel consumption. The TRANSYT program, which was developed in the United Kingdom, has been extensively and successfully used both in the U.S. and in Europe. However, since the conventions and terminology used in TRANSYT are not the same as those used in the U.S., FHWA secured the services of the University of Florida to develop a new version of the



# SIGNAL TIMING PROJECT

program which would be easier to use in this country. This version of the program is called TRANSYT-7F.

A new comprehensive User's Manual has been developed to serve as an instructional and reference guide for traffic engineers who desire to use the TRANSYT-7F program. In addition, a number of presentations of a training course on how to use TRANSYT-7F to conduct a signal timing optimization project will be sponsored by the National Highway Institute and presented in 1983.

The Office of Traffic Operations of FHWA will be providing technical support services to users of the TRANSYT-7F program. These services include: (1) Distribution of the program and documentation, (2) Maintenance of the program and documentation, and (3) Technical assistance to users of the program.

## Summary of the Eleven Cities' Projects

The eleven cities selected to participate in the National Signal Timing Optimization Project were: Charleston, SC; Denver, CO; Des Moines, IA; Fort Wayne, IN; Gainesville, FL; Milwaukee, WI; Nashville, TN; Portland, OR; Pawtucket, RI; San Francisco, CA; and Syracuse, NY. These cities contracted with FHWA to undertake a project to use TRANSYT-7F to optimize the signal timing in a portion of their street network, to evaluate the effectiveness of the optimized signal timing plans, and to determine the resources required to conduct the project.

Data collection activities were largely completed during the fall of 1980. Coding and computer runs were accomplished during the spring of 1981 (after attendance at one of four pilot TRANSYT-7F training courses) and the optimized signal timing plans were implemented and evaluated during the summer of that year. The number of intersections to be retimed per city ranged from 26 to 81 with an average of 46.

All activities were accomplished by city personnel. The TRANSYT-7F program was implemented on local (city, county, or State) or approved commercial services computers. The cities kept records on the resources required for each project activity at a very detailed level. All eleven cities submitted final reports on the results of their projects.

## Resource Requirements

The cost to retime each signal averaged \$450 per intersection. This included data collection, coding, running TRANSYT-7F, analyzing the output, installing the new timing, and fine tuning the new signal timing plans on the street, but did not include project evaluation and overhead.

The labor required to retime each signal averaged 40 hours per intersection. About one-third of this time was professional; the remainder was mainly technician time (engineering and maintenance).

Since this was the first time that any of these cities had used the TRANSYT-7F program, it can be reasonably assumed that the above numbers could be reduced if the program was applied on a regular basis. It is estimated that the cost to retime each signal could be reduced by 25 percent.

TRANSYT-7F required more data collection than the cities normally undertook on a regular basis. The 20 week schedule allotted to the cities to code the data, run TRANSYT-7F, and install and fine-tune the new signal timing plans was too tight. Most cities were 4-8 weeks late, a couple were as late as 12 weeks.

Obtaining adequate computer services when the computer was under the jurisdiction of another city department proved to be a problem in some of the project cities.

## Benefits Obtained

The fuel savings ranged from 2,926 to 31,415 gallons per intersection per year. The overall average was 10,500 gallons per intersection per year. From 8 to 48 gallons of fuel were saved per project dollar invested. The overall average was almost 17 gallons per dollar invested. Assuming that gasoline costs \$1.35 per gallon, this translates to a benefit/cost ratio, on average, of almost 23 to 1 considering fuel savings

only. When the cost for time saved, estimated at a conservative \$0.50 per vehicle hour, and the non-fuel vehicle operating costs, estimated at \$0.014 per stop, are added, the benefit/cost ratio, on average, was almost 45 to 1.

The fuel savings were calculated using the TRANSYT-7F fuel consumption estimates which are based on total vehicle-miles of travel at various cruise speeds, the total number of times vehicles must decelerate from and accelerate to the various cruise speeds, and the total amount of vehicle-delay while stopped. The upper range of these fuel savings is probably overly optimistic, therefore, the averages may be somewhat overstated. However, limited floating car evaluation data collected by the project cities were in general agreement with the traffic performance measures of effectiveness estimated by TRANSYT-7F. Therefore, it can definitely be concluded that signal timing optimization is a very cost effective way of achieving significant reductions in fuel consumption.

A side benefit obtained by the eleven cities was the discovery and correction of various signal system deficiencies found during the course of conducting their projects. These included bad interconnect cable, malfunctioning controllers, the need for additional signal timing plans, etc.

## Conclusions

The following general conclusions can be drawn from the project:

1. The cost effectiveness of signal timing as a fuel conservation measure was substantiated. The Project has shown that the benefit/cost ratio that can be expected from a signal timing optimization project is very high. Considering fuel savings alone, the benefit/cost ratio can conservatively be expected to be on the order of 15 to 1. When the cost of time saved and reduced vehicle operating costs are included, the benefit/cost ratio can conservatively be expected to be on the order of 30 to 1.
2. The TRANSYT-7F program proved to be an effective tool to use for signal timing optimization projects. Although the program requires a significant data collection effort, when used properly it produces very good signal timing plans that can be installed on the street and require only a minimum of fine-tuning. Most of the Project cities have indicated that they plan to use the program for signal timing optimization projects in the future.
3. The availability of technical assistance in the use of the TRANSYT-7F program from both the University of Florida and FHWA was a large help to the eleven project cities. The continuation of such a function by FHWA and States, MPO's, Universities, or consultants will greatly facilitate the completion of signal timing optimization projects.

By Morrie Hoevel

## BELIEVE IT OR NOT . . .

It happened at a driver's license bureau just outside Cleveland, Ohio, according to the Cleveland Plain Dealer. A man sat down to have his picture snapped for his new driver's license. The clerk said, "Now give me a nice big smile." The man replied, "How about taking my picture with my tongue stuck out?" Taken aback, the clerk asked "Why ever would you want to do that?" And the man answered, "The only other person who might see this license will be a policeman giving me a ticket." He was told to hold his tongue.

Reprint from SSITE

# PEOPLE in the news . . . .

## **BILL LEIGHTON RETIRES**

William Leighton, Sign Shop Supervisor for the Detroit Department of Transportation (DOT), is retiring after 36 years of service with the city.

Bill began employment with the Detroit Traffic Engineering Bureau in March, 1947, first as a Traffic Checker and moving up the ranks to become a Traffic Investigator in 1949. He was promoted to Senior Traffic Investigator, supervising traffic control during the construction of freeways in Detroit, ensuring that freeways were built with a minimum of disruption to traffic.

Bill and his wife, Betty, are the parents of two children, Cheryl and Bill, Jr. Bill served with the U.S. Army in Europe during World War II.

The Detroit City Council paid tribute to Bill Leighton in a council resolution which "recognized his years of outstanding service, and his many contributions to improving the quality of life in our community."

## **HERB CRANE RETIRES**



**MR. SCANDI**

Herbert L. Crane, 29374 Sherry Street, Madison Heights, Engineer of Freeway Operations in Detroit, retired from the Michigan Department of Transportation (MDOT) February 12 after 35 years of service.

Herb Crane headed the department's Freeway Operations Unit in Detroit since 1967, and is known among his fellow workers as "Mr. SCANDI."

Crane first became involved in freeway surveillance in 1964 when he worked on a research project to find ways to improve traffic conditions on the John Lodge (US-10) Freeway. The SCANDI concept grew out of that project.

Prior to that, Crane was Assistant Traffic and Safety Engineer in the department's four-county metro District.

We worked on many construction projects in the Metro area from 1953 to 1955, including a stint as instrumentman on the Ford (I-94) Freeway from Grand River Avenue to Russell Street.

Crane joined the department in 1947 as a student with the University of Detroit's Cooperative Employment Program.

He received his degree in Civil Engineering from the University of Detroit in 1950.

Crane spent two years in the U.S. Coast Guard in Alaska, and retired as a Commander in the Coast Guard Reserve in 1970.

He has been a member of the St. Dennis Usher's Club in Madison Heights for 23 years. He also is very active in the American Youth Hostels program where he teaches sailing.

He has served on national committees with the Transportation Research Board and the Institute of Transportation Engineers, and has had several papers published on freeway operations.

Crane is a member of both the National and Michigan Society of Professional Engineers.

He and his wife, Trudy, plan to maintain their home in Madison Heights.

## **NEW MDOT DIRECTOR APPOINTED**



**JAMES PITZ, MDOT DIRECTOR**

Governor James Blanchard recently named James Pitz, 38, director of MDOT. He replaced John Woodford, who Blanchard said he hoped would stay with the Department.

Pitz was Director of Planning and Programming for the Illinois DOT. He said his decision to take over the Michigan agency, with its \$638 million budget, was based on the Legislature's decision to raise fuel taxes and vehicle registration fees and the good reputation of MDOT across the nation.

"I believe we have found someone with the education and background necessary to lead Michigans Transportation Department through a time of change," Blanchard said of Pitz, a civil engineer with degrees from Maquette University and University of Illinois.

Reached by phone, Pitz said, "I come from a philosophy that believes our first priority must be to preserve the existing road system." Pitz declined comment on the repairs to the \$80 million Zilwaukee Bridge and the Detroit subway until he had time to assess them.

## **WELCOME**

**MICHAEL J. TAKO, SEMCOG**

**HAL D. PRUVES, MIDLAND**

# MICHIGAN'S COMMUNITY ASSISTANCE PROGRAM

The Highway Safety Act of 1966 was enacted by the Congress of the United States in order to promote highway safety. Highway safety standards were then developed to assure the orderly implementation of the act. Highway Safety Standard 4.4.13, Traffic Engineering Services, is one of those standards. The purpose of Standard 4.4.13 is "to assure the full and proper application of modern traffic engineering principles and uniform standards for traffic control to reduce the likelihood and severity of traffic accidents." One of the goals of this standard is identifying specific locations or sections of streets and highways which have a high accident experience or potential as a basis of establishing priorities for eliminating or reducing these hazards. As a result of this act, the Michigan Department of Transportation requested and received, through the Michigan Office of Highway Safety Planning, a federal grant which enables the department to address the needs of Standard 13.

The Michigan Department of Transportation, through this grant, is providing free traffic engineering assistance to local governmental agencies that lack the financial and technical prerequisites necessary to pursue similar programs. The intent of this project is to improve traffic safety on all Michigan streets and highways by expanding the traffic engineering evaluation of factors causing accidents and by providing uniform standards for traffic control to reduce the frequency and severity of traffic accidents. The Community Assistance Program provides engineering expertise for identifying, analyzing, and correcting high hazard locations on the local road system. An engineering report is prepared for each location to outline geometric and operational improvements which, when implemented, will reduce accidents and accident potential. Recommended improvements may involve construction of exclusive left-turn lanes, upgrading of signing and pavement markings, improvement of driveway openings, and the installation and modernization of traffic signals where warranted.

Participation in this program may be initiated through a request by a city or county for assessment of their high hazard locations. The request is usually

submitted to the department's Local Government or Traffic and Safety Divisions. The Department of State Police is then asked to provide copies of accident reports for the previous three years at each location. Collision diagrams are prepared from these reports in order to determine the major accident pattern at each location. Recommendations for improvements at these locations are transmitted to the local agency, along with the proper procedures and requirements to obtain federal funding for implementation.

Other services provided by the Community Assistance Program involve working with local agencies in obtaining federal funding to upgrade existing warranted traffic control installations to meet the requirements of the Michigan Manual of Uniform Traffic Control Devices. Also, upon request, local road surfaces will be tested for skid resistance as an aid in identifying slippery pavement conditions. When a low stopping coefficient of friction is encountered and supportive accident data is present, a recommendation for the application of a skid resistant surface is forwarded to the local agencies.

The need for this traffic expertise is quite evident from comparative review of accident history between the trunkline system and the nontrunkline system. About two-thirds of the total accidents in Michigan are occurring on local streets and roads. With total implementation of the Michigan Accident Location Index (MALI) System in 1979, computer programming is utilized to efficiently detect and analyze high accident locations. This automated process provides the capability to maintain a surveillance mechanism for identifying high accident locations on the local road system similar to that used on the state highway system.

Any agency which desires the services of the Community Assistance Program can contact:

Community Assistance Subunit  
Safety Programs Unit  
Traffic and Safety Division  
Michigan Department of Transportation  
P.O. Box 30050  
Lansing, Michigan 48909  
Telephone: 517/373-2310

## FHWA REPORT AVAILABLE

The Federal Highway Administration has recently announced the availability of a technology sharing report entitled "Synthesis of Safety Research Related to Traffic Control and Roadway Elements." This two volume report provides factual research findings on the safety effects of various design and control features that can be used to guide and support engineering decisions. It should be of use to public officials, highway administrators, engineers and researchers.

The synthesis consists of 17 safety research subject areas, each with a separate chapter. The nine subjects in Volume One are: 1) Roadway Cross Section and Alignment; 2) Pavement Surface; 3) Roadside Features; 4) Access Control and Driveways; 5) Intersections; 6) Interchanges; 7) One-Way Streets and Reversible Lanes; 8) Priority for High-Occupancy Vehicles; and 9) On-Street Parking. Volume Two consists of: 10) Construction and Maintenance Zones; 11) Adverse Environmental Conditions; 12) Roadway Lighting; 13) Railroad-Highway Crossings; 14) Commercial Vehicles; 15) Bicycle Ways; 16) Pedestrian Ways; and 17) Speed Zoning and Control.

If you are interested in obtaining a copy of either Volume, you may contact Morrie Hoevel (517-377-1842) of FHWA's Lansing Office who will provide you with an order form for your use. The cost of the individual Volumes is \$7.00 and \$6.50, respectively. A 25% discount is applied to all orders of 100 or more.  
By Morrie Hoevel

## TRAFFIC FATALITIES CONTINUE TO DECREASE

Traffic deaths on Michigan roads and streets continue to decline for the fourth straight year. Provisional figures (there is a 90-day delayed death reporting period) available from the Department of State Police indicate that 1,393 people were killed in traffic crashes in 1982 compared to 1,589 in 1981 which is a decline of 196 deaths or 12.3 percent. The decline since 1978 is an impressive 683 less fatalities which is a 33 percent reduction. With the exception of 1958 (1,382), the number of fatalities recorded this year is the lowest figure recorded since the mid-1940's. It also appears that there will be a reduction in both total crashes and the number of people hurt in crashes in 1982. Statistics through October of 1982 show overall crashes down 2.6 percent (6,401 less crashes) and injuries down 6.2 percent (6,984 less injuries). The efforts of the traffic safety community have contributed to these reductions. Let's continue the fine job in 1983!!

By Bob Lariviere

This roadside sign was spotted outside Idaho Falls, Idaho: "Speed Limit 55. Those OBEYING Move to the Right and Don't Block Traffic."  
Reprint from SSITE

## SCANDI IS DANDY

On November 17, 1982, the Department of Transportation, SCANDI, began the first phase of a ramp metering program on several ramps on eastbound I-94 in the city of Detroit.

Ramp metering is a proven method of regulating the rate at which vehicles enter the freeway. This results in a smoother traffic flow on the freeway, making travel safer and more efficient. It also enables the freeway to accommodate up to 300 more vehicles per lane per hour during peak traffic hours, leading to faster driving times for all motorists using the freeway. It works by regulating the rate at which vehicles enter the freeway from six main entry ramps along the eastbound Ford Freeway.

Ramp "meters" operate just like regular traffic signals with a red and green light, which are located at the end of the ramp, just before you enter the freeway. When the signal is red, you must stop and wait until it changes to green. The signal will remain on red only a few seconds as each car approaches it. The green will be very short, and will allow only one car at a time to proceed. This will allow you to safely merge in the gaps of traffic. Once you get the green go-ahead, you merge with freeway traffic as you always would, yielding to other vehicles that are close enough to be of immediate danger. Ramp metering will be in operation only during peak traffic hours. Detroit's system is the most advanced in the nation. Although drivers only see the traffic signals at ramps, the real "heart" of ramp metering goes on beneath the surface. All metered signals are electronically coordinated by a computer and work as a "team." They are hooked into a finely-tuned computer system, part of the new "SCANDI" system which monitors conditions on 32.5 miles of Detroit's freeways.

With ramp metering, vehicles travel an average up to two-and-one-half minutes faster per mile during peak traffic hours. That's a savings of up to 15 minutes on a six-mile trip. In addition to saving time, metering saves gas and cuts down on air pollution from auto emissions. Since metering requires drivers to space themselves when entering the freeway, it makes for safer driving habits, leading to a reduction in accidents. SCANDI is part of Detroit Freeway Operations.  
By Joe Meszaros

## THE 18 BOTTLES

I had 18 bottles of whiskey in the cellar and was told by my wife to empty the contents of each and every one down the sink or else! I reluctantly said that I would and proceeded with the unpleasant task.

I withdrew the cork from the first bottle and poured it down the sink, with the exception of one glass, which I drank. I then withdrew the cork from the second bottle and did likewise with it, with the exception of one glass, which I drank. I extracted the cork from the third bottle and poured the glass down the sink, which I drank.

I pulled the cork from the fourth bottle down the sink, and poured the bottle down the glass, which I drank. I yanked the cork from the next glass and drank one sink out of it and threw the rest down the bottle, which I drank.

I pulled the sink out of the next glass and poured the cork down the bottle, which I drank. Then I corked the sink with the glass, bottled the drink and drank the pour.

When I had everything emptied, I steadied the house with one hand, counted the glasses, corks, bottles, and sinks with the other, which were 29, and as the house came around again, I counted them again.

Finally, I had all of the houses in one bottle, which I drank. I'm not under the affluence of incohol as some tinkle peep I am. I'm not half as thunk as you might drink. I fool so feelish, I don't know who is me, and the drunker I stand here, the longer I get...  
...00000h Meeeee...

Author Unknown  
Submitted by: Theresa DeCorte

## SAFETY BELT BILL INTRODUCED

Representative David C. Hollister (D-Lansing) recently introduced H.B. 4203 which, if passed, would require the driver and front seat passengers to buckle-up! The bill is similar to the one introduced last year but withdrawn.

It was introduced into the House Insurance Committee by Hollister and Co-Sponsors McNamee, Forbes, Ehlers, Kirksey and Brotherton.

Violation of the proposed law provides for a \$10 fine but no points on a driver's record. It also has a three-year sunset provision. It exempts persons in vehicles not required by federal law to have belts (before Jan. 1, 1965), vehicles with passive restraints, buses, motorcycles and persons with a doctor's excuse.

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## TRAFFIC SAFETY PIONEER NEVER DROVE A CAR

Appalled at the traffic jams and general confusion on the streets of his native New York City, 42-year old William Phelps Eno wrote an article in 1900 condemning traffic conditions and offering a number of solutions in the way of traffic signs, regulations governing the use of motorized and horse-drawn vehicles, etc. Upon publication of the article, Eno became instantly recognized as a traffic expert and would become known as the father of traffic safety. Ironically, Eno never drove a car, limiting his transportation to walking and horseback riding until forced into a car out of necessity, but even then he left the driving to a chauffeur.

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## CHILD RESTRAINTS

SECTION TECHNICAL PROJECT

Most of you are aware that the Section has been very active in the promotion of child restraint use in Michigan. A number of public information booths, staffed by Section members and using material furnished by the Office of Highway Safety Planning, were organized at shopping malls in the Detroit, Lansing, and Kalamazoo areas. Child seats, purchased with Section funds, were raffled in conjunction with those activities.

In addition, the Section was active in supporting the child restraint legislation which took effect in 1982. Letters were sent by the Section Executive Board, and by individual members, to legislators, documenting the scope of the problem in Michigan and encouraging passage of the law.

These efforts have now been documented in a report "Child Safety on Michigan's Highways--A Solution" which is being offered as a technical project of the Michigan Section. Each year there is a national competition for the best Section technical project. In fact, in 1978 a Michigan Section project "Traffic Safety Planning on School Sites" won this award.

This year's report, prepared by William Lebel, has been submitted for award consideration to District 3 of ITE. If judged the best district project, it will be submitted to national. The winning national report will be published in the ITE Journal and the Section will be offered the opportunity to present it at the international or other appropriate meeting. A suitable award certificate is also presented to the winning Section.

The many Section members who participated in the various phases of this project can take pride in the role they played in the promotion of child restraint use and eventual enactment of the mandatory use law. Copies of the technical project report, which document these efforts, will be made available to the membership in the near future.

By William T. Lebel

AT SCHOOL ZONES HEED INSTRUCTIONS,  
PROTECT OUR LITTLE TAX DEDUCTIONS!

AUSTRALIAN ROAD SIGN



You are forgiven if you can't figure out that this sign in the Mornington Peninsula, southeast of Melbourne, Victoria, denotes an Echidna Crossing.

## FROM CALIFORNIA . . .

There she stood, in a big chuckhole wearing a wig, a halter top, and a sign imploring, "Help, Fresno Street Department." And, according to Jennings Parrott in the Los Angeles Times, a road crew was out within an hour, smoothing out pothole-ridden Pontiac street. Ted Meeker, a resident of the street, didn't know if prompt repair resulted from his complaint to city hall or from the manquin he propped up in the hold in the road.

Reprint from SSITE



### Guindon's Detroit



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**Carp were once used as breathalyzers. The police figured any fool who would put a carp in his mouth and blow into it would have to be drunk.**

Guindon Detroit Free Press

### PRESIDENT'S COLUMN Cont. from page 1

One of the goals of ITE Michigan Section programs during 1983 will be to develop our members as reflective practitioners. We will be focusing on professional development as well as improving our technical skills. As part of the professional development program we will be enhancing our communications skills so that we can be more effective at selling our individual traffic engineering programs. We hope this additional focus will help in developing our creative abilities for application in the art of traffic engineering.

By Richard F. Beaubien, P.E.

**Timothy D. DeWitt**  
Highway Construction  
Products Representative

(517) 482-8616

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## GENERAL MOTORS PLANS SECURIFLEX WINDSHIELD TEST IN RENTAL FLEETS

Federal safety officials have granted General Motors permission to equip 2,500 automobiles for rental fleets with anti-lacerative windshields to test their durability in use.

The auto maker has shipped regular laminated production windshields to Saint-Gobain Vitrage in Europe in order that the Securiflex "inner guard," a film of clear plastic, be applied and the windshields returned for installation in General Motors cars. The "inner guard" is expected to reduce painful and disfiguring lacerations in crashes.

More than 2 1/2 years ago, the Securiflex makers petitioned for a change in the windshield standard so that their product, which has had much use in Europe, could be accepted for U.S. vehicles.

Reprinted from Status Report

## CONGRESS APPROVES NATIONAL UNIFORM SIZE AND WEIGHT STANDARDS

Larger, heavier truck combinations will be permitted on interstate highways in all 50 states as a result of congressional action aimed at softening the impact of new heavy truck taxes approved in late December.

The new size and weight standards are effective immediately upon Presidential approval. They are: 80,000-lb; 48-ft. semi-trailers; 28-ft. doubles semi-trailers in combination. Trailer width is also increased from 96-in. to 102-in., effective October 1, 1983.

States that do not allow the new standards will not receive federal highway aid.  
Reprinted from Overdrive Magazine



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