MONTEZUMA'S REVENGE

Lacking the $51,000 necessary to buy 32,000 badly needed light bulbs, city workers have begun removing bulbs behind yellow caution lights in traffic signals. Buenos Aires' notorious reckless drivers now will be faced with a green light for one moment and at the next with a brake-squeaking red light. Since many drivers regularly run red lights, many are expected to cruise through the abrupt "stop" flash. Others may try to slam on their brakes, and some fear the loss of the yellow warning could cause more accidents. Concerned drivers wonder what will happen when the bulbs behind the red and green lights burn out? Will the light bulb changers opt to keep the "stop" or the "go" lights burning?

RUMBLE STRIPS ON SECONDARY ROADS NO SAFETY BENEFIT

Recently Iowa conducted a study to evaluate the safety benefit of rumble strips used on paved rural secondary roads. In a comparison of 111 intersections with rumble strips installed for 1978, with 111 comparable intersections without rumble strips showed that the control locations actually had lower accident rates. The difference was 215 in the case of total accidents and 148 in the case of run-off road sign accidents.

It seems from this study, that there is absolutely no benefit to using rumble strips on rural secondary roads in advance of railroad grade crossings, intersections or other locations.

The report is contained in Transportation Research Record 925 available from TRB, 2101 Constitution Avenue, N.W., Washington, D.C. 20401. Reprint from ATSA Signal

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September 1984

MICHIGANITE

Official Publication Michigan Section

CON TRAFFIC

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BEAUBIEN ELECTED DISTRICT III DIRECTOR

Richard F. Beaubien, P.E., was recently elected District III Director to the International Board of ITE. Beaubien is currently Transportation Director in the City of Troy previously he was with Reid, Cool and Michalski and the Federal Highway Administration.

BEAUBIEN ELECTED DISTRICT III DIRECTOR

MICHIGANITE

VOLUME XXII, NUMBER 3

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

PUBLIC LIBRARY

FALL 1984

BEAUBIEN ELECTED DISTRICT III DIRECTOR

PRESIDENT'S COLUMN

FROM THE DESK OF...

by Tom Kryszkiewicz

The previous two columns I have prepared have been considerably easier than this one will be. I'm sure I shall be the last person asking for a building fund from one pulpit! Actually, this is a slight exaggeration. When one considers the fact that the majority of our members have not seen a dues increase since joining our state section of ITE (the last one was some ten years ago), it is most amazing that our section has been able to operate on only $800 per member dues fee over this time period. We all know what inflation has done to our grocery bills, our home mortgages, automobile prices and expenses, and the list goes on and on. There are not too many things which you can buy for $800 today.

Richard Guard has done an excellent job of showing why we need this increase on the next page. Consequently, your board feels that we should increase section dues to $12.00. Although we recognize the fact that this is a 50% increase, we feel that it is essential to the section coffers. Twelve dollars is still less than a good magazine subscription and besides the Michiganite beats that! When you receive your ballots for the annual meeting, please remember that a lot of serious consideration went into this request for increase when you vote yes or no. It is recommended that chapters such as ours have SOS reserves in their savings account to keep afloat in time of need. We do not even come close to that. Also, remember that good section activities do require some expense!

I would now like to take a little time to talk about non-financial matters. Monthly accident summary sheets coming across my desk appear to indicate a reversal in a five-year downward trend in traffic fatalities. As transportation engineers, we should all be concerned. Perhaps, just perhaps, there's a link to increased speeds on our state's highways as 55 MPH is more and more being forced on us. My office will be looking at the situation and at the road system where the increases are occurring.

It's discouraging when one considers tougher drunk driving laws and the increased enforcement we're getting across the state. (See January ITE.) This fall, a report is due to come out of the national 55 MPH speed limit as prepared for Congress by the National Academy of Sciences. This was a requirement of the 1972 Surface Transportation Assistance Act. National ITE has shown a direct interest in the study and I'll keep you posted on both issues.

NEW YORK TAKES LEAD ON SEAT BELT LAW

The question about which state will be the first to pass a safety belt use law has just been answered - New York is now number one. Beginning January 1, 1985, drivers and all front seat passengers will have to "buckle up" or face fines of up to $50. In addition, children under 10 years of age, regardless of where they are seated, will be required to use a seat belt or be restrained in approved child safety seats. Technically, the measure takes effect on December 1st of this year, but during this one month period only verbal warnings will be given.

Cont. page 2

Cont. page 2
PEOPLE in the news...

BILL SUTHERLAND RETIRES

Bills Sutherland, who has been with the Wayne County Road Commission since 1952, has recently retired. Bill received a Bachelor of Science degree in Civil Engineering from the University of Michigan in 1952, beginning his long career with the WCRC. He proceeded through the positions of Free Design Engineer, Assistant Engineer of Planning and Assistant Director of Transportation before being promoted to Director of Transportation in 1980. We wish Bill and his family well and hope to continue to see him at ITE meetings.

BOB LARSON LEAVES WCRC

Effective July 4, 1984, Bob Larson retired from the Wayne County Road Commission to assume the Managing Director position with the Monroe County Road Commission. Larson received his B.S. in Civil Engineering from the University of Michigan in 1952 and a Masters Degree in 1969 from U-M. He began his career with the Oakland County Planning Commission moving to the WCRC in 1967. In 1972 he was promoted up through the ranks to become Assistant Managing Director in 1980.

Bob is a Registered Professional Engineer and a member of ASCE and ITE.

RESTRAINING DEVICES SAVE TWO LIVES

Although the bill does provide exemptions for certain vehicles and the handicapped, it does not exempt the out-of-state motorist. New York and other drivers would be liable for payment of fines for themselves and anyone under age 16 in the vehicle; otherwise, those 16 years or older would have to pay any fines themselves. This "first-in-the nation" law is expected to reduce fatalities by at least 400 annually and also prevent up to 14,000 serious injuries. The anticipated economic benefit is projected to be in the $50 million range. This much should be saved alone in terms of reduced medical costs for patients, lower lost work hours, supporters said. An interesting side note — just one day before signing the bill into law, New York Governor Mario Cuomo was involved in a serious rear-end collision in Buffalo — and escaped uninjured, wearing his seat belt and a vest at the scene (the Governor’s car was rear-ended) and indicated that the seat belt and vest certainly have hit his head on the dashboard or windshield he had not been using his seat belt.

MICHIGAN BICENTENNIAL

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MICHIGAN SECTION ITE, TREASURER’S REPORT

Balance: June 1, 1984 $1,233.37
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Meetings $249.50

Expenses:
MICHIGAN Bicentennial $ 985.60
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Treasurer, Rich Cundie, P.E.

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 additional members with communications regarding the Michigan ITE to the Editor, Robert V. DeCosta, 4750 Napier Road, Canton, MI 48107.
MORAL IMPLICATIONS OF THE 55 MPH SPEED LIMIT

For the past 10 years, most of the discussion surrounding the 50-55 mph national maximum speed limit (MSL) has focused on its effects on fuel consumption and safety. There has been a comparatively little analysis of certain negative effects, societal and behavioral, associated with the law, conflicts stemming from persistent, high levels of public disobedience; from evasive, often arbitrary enforcement; and from confusion and certain amounts of disagreement within the traffic safety community as a whole.

Of recent concern has been the apparent contradiction between public expressions of support for 55 mph (more than 75 percent favor it according to poll) and an almost equal number of drivers who disobey it. It is at least paradoxical that the very same motorists who claim to support the MSL also choose to disregard it much of the time.

"...one of the principal features of transportation...has been man's decision to travel faster than he can afford to crash."

The same paradox can be found in public attitudes toward speed itself, for the fear of speed - or, more precisely, of acceleration - is almost always innate in human beings. An infant who has never experienced a fall, will nonetheless refuse to crawl across an elevated panel or even to walk on its backdrop魔鬼. This fear of falling gives every appearance of being genetically encoded - yet, as adults, we manage ourselves to ride in jet aircraft at 500 mph as well as in high-speed trains, buses and cars, all at velocities well above the safe limits of maximum deceleration.

In fact, one of the principal features of transportation in the 20th Century has been man's decision to travel faster than he can afford to crash.

Moral Disapproval

This explains the paradox. It is simply the conflict between the public's fear of speed - a fear often expressed as moral disapproval - and its willingness to travel faster than is safe to crash under certain conditions. Understand this way, "speed" is a metaphor for behavior threatening to society, or its individual members (speed 'kills,' etc. - speed is evil) without regard to any velocity in particular.

While this "metaphor" of speed may be illogical, it is not entirely impractical. It has acted as a natural brake on the evolution of faster means of transport through the years, and allowed an incremental rise in average highway speeds - about 1/2 mph per year since 1847 - at the same time that the number of accidents and fatalities per mile were declining. Only when the metaphor is taken literally - when speed is quantified in moral terms, and used to calibrate behavior - does this orderly process cease. Only then is the public's ability to adapt to technological advances inhibited and destroyed.

"...certainly no one should imagine that 55 mph is a safe speed to crash."

The question is not one of stopping or slowing "progress" in the interests of greater safety: typical speeds already exceed the deplorable limits of survivability (about 45 mph in a barrier impact), and certainly no one should imagine that 55 mph is a safe speed to crash. The critical question, then, is the probability of crash occurring, and the most important aspect of speed in causing crashes.

What Causes Traffic Crashes?

Does speed cause accidents? The common wisdom holds that it does, and opinion supported by police reports of accidents and such observers as the National Safety Council, but such reports are dated and biased. Undoubtedly speed can contribute to accidents, particularly when the limits of control are exceeded - or, when sudden changes occur in the driving environment; but the most thoroughly controlled studies yet performed on causes - Campbell, Sklar, Solomon, et al. - indicate that speed is the primary cause of comparatively few accidents, ranking behind excessive use of alcohol and a variety of driving errors, such as improper lanes and lane changes, following too closely, etc.

It could be argued that all or most such actions would be less harmful if performed at lower speeds - but few would go so far as to propose that the proper function of speed limits is to make it safe to follow too close or drive while drunk. If such were the case, speed limits would have to be set very low, inasmuch as 80 percent of today's fatal crashes occur at 40 mph or less.

Value of 55 mph Enforcement

Considerations such as these not only explain why the MSL has failed to gain a greater measure of voluntary support, they suggest practical limits to efforts to enforce speeds which are significantly lower than the 85th percentile (the speed at or below which 85 out of 100...
WE'RE SORRY

We failed to list Victory Childers and Don Schneider as authors of the article on "Crash Cushions." In the future, we apologize for the oversight and thank them for their excellent contribution of text and photographs.

FROM THE DESK OF... THE EDITOR

The ITE has a series of fifty-one policies regarding everything from Canons of Ethics through Federal-Aid Highway Program Categories to a National Energy Policy. Policy 0-12, Maximum Speed Limits addresses the national maximum speed limit. It is stated in the ITE Membership Directory as follows:

"0-12. Maximum Speed Limits. It is the policy of the Institute of Transportation Engineers to encourage studies to determine appropriate maximum speed limits. Continuing investigations, including those concerning traffic engineering practices and economic, environmental and social impacts, are required. Research is needed to determine if the maximum speed limit can be raised on select Interstate or other high standard freeway without compromising safety."

If we analyze this policy by removing the cosmetic terminology and paraphrasing, we arrive at something like:

It is ITE's policy to encourage studies to determine speed limits. Continuing investigations are required. Research is needed to raise speed limits without compromising safety.

Perhaps it is time we take a hard look at the "studies," "investigations" and "research" available and take a firmer stand on the 55 national maximum speed limit. It is 13 years old. It was conceived and born in a political bedroom by people who were more interested in saving money and energy than in raising a wholesome family of laws. At its birth, its parents felt that there would only be a few states willing to love and care for it, so states were financially blackmailed into accepting — at least by posting signs stating so: "55 MPH SPEED LIMIT!"

When it became obvious the States were not paying due homage to the little butt, the Feds decreed to both withhold money for lack of interest and to pay money for an accelerated slowdown of love through 55 mph enforcement. Now, when States cannot document sufficient interest in the child, the Feds step in to revise the statistics so that they will say what they want them to say: compliance.

It is truly a blessed event when a new child is born to a loving family for all the good reasons. We also know that there will be a judgment day. A day when all facts are studied and records are maintained to determine the real worth of the child. It is now time for ITE and its members to look at the facts and determine the worth of a law that was born out of wedlock, robbed innocent people of countless time and money and forced police and motorists to play electronic hide-and-seek.

Let's declare the law an official bastard and return to setting realistic speed limits through the 65th percentile and other official means.

BRAHM'S REPORT TO BOARD

National IPE's Executive Director, Tom Brahm, reported to the International Board of Directors the number of members of ITE. As of January 23, 1984, the Institute had 6,480 individual members and 47 Associated Organization Division members. This compares to 6,394 individual members and 45 Associated Organization Division member companies on January 3, 1983. The following compares this data in more detail:

Membership Goals January, 1983 January, 1984 Change

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NO: 6394  1400 -60

WHICH DRIVER SURVIVED?

The driver of this vehicle approached a sharp curve at an estimated speed of 45 m.p.h. The vehicle went out of control, throwing the driver (not wearing a safety belt) toward the passenger side. He was half thrown out of the passenger side window which was rolled down. The vehicle rolled over on its side with the driver's head outside. The vehicle rolled over on the driver. Note: In the picture that the windshield has damage on the far passenger side. The indentation was caused by the deceased driver's head.
SIGNAL OPTIMIZATION STUDY

FHWA recently announced the availability of a new technology rating report titled "Traffic Signal Optimization Programs - A Comparison Study." This report is the result of a study designed to assist the practicing traffic engineer in selecting a computer program for optimization of traffic signal timing.

Studies were conducted in three cities, one with an arterial, one with a quasi-network, and one with a CBD network. The three computer programs compared were MASTAB, TRANSIT JF, and SIGTOP II. The comparison provided valuable information that will enable the traffic engineer to make a more intelligent decision on which program may be more applicable to his traffic signal system. The report should be of interest to all traffic engineering personnel who have traffic signal timing responsibilities.

Today, change appears to be the most consistent factor in the field of computer programs to optimize traffic signal timing. This is particularly true of the three computer programs used in the study. At the time of this study, TRANSIT JF, Release 2 was the version being supported by FHWA. Since then, TRANSIT JF has been updated to Release 3. Some of the limitations identified in this report have been corrected in Release 3. Similarly, the SIGTOP II and MASTAB programs have been recently updated to correct some of the limitations identified in this report.

Copies of the report are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

By M. A. Novell

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THE FIFTH ANNUAL PEDESTRIAN CONFERENCE EXPANDS INTERNATIONAL PERSPECTIVE

The City On Its Feet, the Fifth Annual Pedestrian Conference hosted by the City of Boulder, Colorado, has become international in its perspective over the years, and this year is no exception. Foreign speakers are being brought to the Conference on September 20-21 to offer their unique perspectives and illustrate successful European and Asian pedestrian spaces.

The speakers provide opportunities for interaction with foreign experts as well as bringing novel ideas and standards for comparison to the Conference. Featured presentations will be made by the following international speakers:

Mayor D. Rahmlow, Germany; Tadagoshi Fujiki, Japan; Anthony Ramey, Scotland; Reihardt Ehlert, Germany; Jan Gahl, Denmark; and Gerhard Neuburger, Germany. Their topics will include studies done in their respective countries as well as in Poland, France, and the United States.

Other highlights of the September Conference include presentations on today's World's Fair and Olympic complexes, keynote addresses by Tom Down, Deputy Mayor of Washington D.C., and Herb Levinson, Professor of Civil Engineering, and illustrative walking tours.

For registration and information, please contact the Conference Coordinator, Transportation Division, P.O. Box 791, Boulder, Colorado, 80306, (303) 441-3166.
HIGHWAY SAFETY ENGINEERING is a relatively new and relatively recent innovation. It was not until automobiles began to proliferate and drivers started pushing up speeds, causing them to travel at speeds of more than 50 mph that highway planners implemented widespread major improvements in safety design, such as straighter, flatter roads, boldered curbs and greater emphasis on highway dividers - median barriers and barriers. Consider, for example, that in 1937 almost 34,000 people were killed in motor vehicle accidents nationwide; a death rate of 11.66 per 100 million miles of vehicle travel. At that time, there were only 14,000 miles of nonurban divided highways in the United States. By 1963, when highway dividers were commonplace, the death rate had fallen off sharply to 2.63 per 100 million miles.

It took only two highway dividers to bring down the death rate, of course. But dividers—especially median barriers—play a primary role in reducing the number of head-on collisions, a particularly deadly type of accident.

The life-saving value of median barriers has increased over time for several reasons. One is the development of new, more effective design configurations that deflect and/or absorb impact energy to minimize the danger of a front-to-front or sudden stop collision. Another is the way dividers impact barriers.

A cylindrical tube filled with sand running "snake-like" for miles is how a spokesman for international barrier Corp. (IBC) described his company's galvanized steel highway barrier. The product, he explained, "can accommodate" the many vehicles impact barriers.

55 MPH...

"A barrier is a low-cost barrier, for example, a barrier that is made of aluminum alloy 6061-T6 extrusions, or "shapes," that interlock to form a flat plane, which is not suitable for use in the presence of highway bridges or the presence of conventional concrete barriers. A barrier that is made of aluminum high-strength-to-weight ratio and the barrier's additional design strength will be a barrier that can be made by the use of conventional concrete barriers and 60 to 70% lighter than galvanized steel barriers with comparable strength. A 4 ft long section, when fully assembled, tips the scales at only 1,000 lbs.

The barrier's design strength is a key factor in its performance. The weight basis of the barrier is 4 times as strong as steel and 4 times as strong as steel and 4 times as strong as steel and 4 times as strong as steel. But that is a relative judgment. It is true that concrete barriers are at a disadvantage in certain applications. Being rigid and heavy, they do not absorb impact energy efficiently and weigh too much for many older bridges. On the other hand, rigid and heavy is well suited to the role of highway dividers, which are used to eliminate the number of head-on collisions in various safety designs. Concrete barriers are a range of performance characteristics that are unequalled in a single rigid-class material. On a weight basis, Quizzel is four times as strong as steel and 4 times as strong as steel and 4 times as strong as steel and 4 times as strong as steel. But that is a relative judgment.

Quizzel, a product of Quizzel Corp., is characterized by its weight, efficiency, and performance. Its many industrial uses include the construction of median barriers. A Company spokesman provided a peek at the product's design. Selectively-graded materials are combined with polymers and monomers in a patented mixing, molding and curing process. Powerful centrifuged mechanical and chemical bonds formed during the process give Quizzel a range of performance characteristics that are unequalled in a single rigid-class material. On a
Could You Use A Snow and Ice Control Spreader That...?  

- Has a 10 YEAR, NO rust GUARANTEE
- Doesn't tie up a truck
- Is self-storing
- Spreads uniform pattern regardless of traffic or wind
- Never sprays cars, lawns or trees
- Precisely meters salt or abrasives in any desired quantity
- Is ground-speed synchronized with NO SENSING DEVICES
- Can handle SALT quantities in HALF
- Spreads any granular material — year round utility
- Breaks up frozen lumps
- Operates with dump truck body DOWN
- Permits SAFE one-man plow and spread operation, as much as — as little as 100 LBS PER LANE MILE
- Provides much bigger load — cuts down or ELIMINATES DEAD HEADING
- Spreads uniform pattern EVEN ON GLARE ICE
- Has no motor
- No hydraulics
- Has no operating speed limitations

- to spend one dollar saving a life is wrong if, by spending the same dollar differently, two lives could have been saved."

What is the cost, for example, of creating a constant, pervasive "adversary relationship" between citizens and the police? ...of seeking, as a daily example to the youth of this country that unreasonable laws need not be obeyed, and that the right to declare which laws are reasonable, and which are, not, rests with the individual..." If creating financial inducements, as the present federal law does, for states to misrepresent or misrepresent crucial traffic data? This nation's experience with alcohol prohibition, though not comparable in all respects, is yet another example to the point. Traffic safety can be high indeed.

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"...controlled studies... indicate that speed is the primary cause of comparatively few accidents..."

Several other moral questions have yet to be addressed in this context, and some have not even been asked. Such as:

- Can any government afford to establish and maintain a traffic law, however admirable in intent, that does not consider the environment in which it is placed?
- Is it morally defensible to promote obedience to such a law by failing claims for its effectiveness and by not providing financial data that are known to be incomplete, and in some cases, unrepresentative?
- How moral is it for the government to conduct a fictitious factor for "speedometer" error, when no DOT has documentation of compliance levels and actual speed behavior by as much as 4 to 5 mph.

Cost-Benefit Factors

The answers to such questions are as essential in determining the relative costs and benefits of S as are such physical devices as added road vehicle, vehicle maintenance, fuel saved, w.s. time lost, etc. The long-term costs to social order and cohesion cannot be discounted simply because they are difficult to predict or quantify.

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LOW-COST URBAN ROLLER STRIPES REDUCE ACCIDENT RATE 52%...

Caltrans develops technique for efficient deployment of urban roller stripes to help prevent "ran-off-road" accidents

Technologically complex inventions such as VGS, computers and the space shuttle seem our respect. So do relatively simple devices such as roller stripes. VGS, new variation on roller stripes developed by Caltrans, and the California Department of Transportation's (Caltrans) deployment of roller stripes has itself nothing new, of course. Paint designers have used them for years to reduce the intensity of light refection to drivers that they are approaching a toll gate, intersection or other mandatory stop point. The additional use of roller stripes to reduce the number of 30 mph type accidents and (2) the department's development of a cost-effective way to build the stripes into continuous miles of pavement.

In a background report by Caltrans engineers J. H. Mackett and Gary Nelson, the Department described its approach to the problem:

For years, the California Highway Patrol and traffic engineers have searched for a way to communicate with the careless motorist. These people are often driving poorly maintained vehicles, often under the influence of alcohol, drugs or speed, resulting in boredom, fatigue or combinations thereof. They fall asleep at the wheel or are inattentive, run off the freeway shoulder, overcorrect and roll the vehicle.

Saving drivers from themselves

"Earning a wonder change in human nature, there is only one practical way to save these drivers from themselves: They must be forced to slow down every time their vehicles start off the pavement."

For obvious reasons, Caltrans notes, this cannot be accomplished with existing devices such as signs or pavement striping. "The solution, therefore, must be the use of mechanical devices. The study includes: marked bar, pavement grooves and other systems of alert in the general heading of "roller stripes." Caltrans had earlier tested such systems for the effects of the use on the stripes of a number of highways and found the results disappointing. Later, results of a separate study by the National Highway Traffic Safety Act, CA, suggested that the best locations used in Caltrans' research were not long enough, at least, to give the true effects of shoulder roller stripes."

Human Factors' research had determined that when drivers are passing other vehicles and ahead a warning device, they are likely to slow down on the pavement for fear of the shock of a rapid drift on the shoulder again. If no impact is encountered, they are likely to sharply drift on the shoulder."

In order to try to make an ambitious testing project to evaluate the usefulness of shoulder roller stripes. The stripes were added to the shoulder 232 miles of the project of the California Department of Transportation between I-5 and I-80, 8 miles of which was resurfaced between I-5 and the Nevada state line, followed by an additional 20 miles of Route 99 and a portion of Interstate 40 east of Needles."

The locations north and south to Caltrans were, ideal for the project because motorists driving their vehicles through the mountainous regions between Los Angeles, Las Vegas and the Colorado recreation areas are very congested, and so are more prone to speed and insensitive to speed, super highways and grade extremes. There is a strong tendency to exceed the speed limit. By time to maximize recreation time."

The stretches of highway were all efficiency selected for resurfacing. The primary plan was to form grooves in the new asphalt surface, using some kind of machine to give the stripes at regular intervals in the shoulder, perpendicular to the roadway. 55 NMSL ... Cont. from page 3 12 ... to spend one dollar saving a life is wrong if, by spending the same dollar differently, two lives could have been saved."

What is the cost, for example, of creating a constant, pervasive "adversary relationship" between citizens and the police? ...of seeking, as a daily example to the youth of this country that unreasonable laws need not be obeyed, and that the right to declare which laws are reasonable, and which are, not, rests with the individual..." If creating financial inducements, as the present federal law does, for states to misrepresent or misrepresent crucial traffic data? This nation's experience with alcohol prohibition, though not comparable in all respects, is yet another example to the point. Traffic safety can be high indeed.

"...controlled studies... indicate that speed is the primary cause of comparatively few accidents..."

Several other moral questions have yet to be addressed in this context, and some have not even been asked. Such as:

- Can any government afford to establish and maintain a traffic law, however admirable in intent, that does not consider the environment in which it is placed?
- Is it morally defensible to promote obedience to such a law by failing claims for its effectiveness and by not providing financial data that are known to be incomplete, and in some cases, unrepresentative?
- How moral is it for the government to conduct a fictitious factor for "speedometer" error, when no DOT has documentation of compliance levels and actual speed behavior by as much as 4 to 5 mph.

Cost-Benefit Factors

The answers to such questions are as essential in determining the relative costs and benefits of S as are such physical devices as added road vehicle, vehicle maintenance, fuel saved, w.s. time lost, etc. The long-term costs to social order and cohesion cannot be discounted simply because they are difficult to predict or quantify.

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RUMBLE STRIPS

An engineer's evaluation of the project's early stages warned that "if the temperature of the material was too hot, rolling [of the rumble strips] would occur if too cool, depressions were too shallow. The rule was to place one's hand on the asphalt, and begin rolling depressions when 'fins' stuck to the palm of the hand—about 180°F—and discontinue when the mat began to tear." He also suggested that rumble strips should be placed in place before daylight during summer, when the temp-erature was warmer, to accelerate the matting tracks while position-ing the roller.

Once the strips were laid, Caltrans found that the process cost 3 to 7 per cent, and bid future projects at 5.5/cent per foot or its name. The installation has dramat-ically reduced the risk of drivers drifting off the road. Such accidents declined by a spectacular 925 on highways where the shoulder grooves have been installed. In human terms, the rumble strips prevented two fatalities, 34 injuries and 16 property-damage accidents.

Reprinted from Better Roads

AUTOMATIC SEAT BELTS LOWER INJURY CLAIMS

Volvo's Move to Automatic Seat Belts

Volkswagen Rabbits equipped with automatic seat belts have a 14 percent lower overall average claim frequency for occupany injuries than comparable Rabbits equipped with manual belt systems, the Highway Loss Data Institute has reported.

HLIS said that almost all the difference in claims involved cars for which a collision claim was filed in addition to the injury claim. "Such crashes are more likely to be frontal," HLIS said.

Moreover, in cases where large collision damage claims were filed, associated injury claims were consistently lower for the Rabbits equipped with automatic belts than for those equipped with manual systems. HLIS said: "The result...strongly suggest that the automatic belt system offers on rabbits reduces the frequency of injuries in such cases." HLIS said.

The study was submitted to the National highway Traffic Safety Administration (NHTSA) in support of reinstatement of the automatic retractor provision of the Federal Motor Vehicle Safety Standard 08.

The report compares the frequency of insurance claims for injuries to occupants of 1981 and 1982 Rabbits, equipped either with automatic or manual seat belts. The claim was based on 51,970 insured vehicles years of exposure for Rabbits equipped with manual belts and 31,064 insured vehicle years of exposure for Rabbits equipped with automatic belts. The overall injury claims for Rabbits equipped with the manual system was 16.9 per 1,000 insured vehicle years, contrasted with 14.9 claims per 1,000 insured vehicle years for those with automatic systems, HLIS said.

Reprinted from STATUS REPORT

INFORMATION NEEDED ON ARROW BOARD PLACEMENT

AWM Industries, Inc., Columbus, Maryland, is under contract with FHWA to conduct a study of "Arrow Board Placement at urban and Freeway Work Zones." The primary objectives of this study are to review current practices and considerations in arrow board placement and to develop an information sheetside-band-produced for placement to highway, traffic and maintenance engineers.

The study team is currently collecting information from individuals and agencies with experience in the placement of arrow boards. To contribute pertinent information, it should be supplied to Claude M. Ligon, P.E., Principal Investigator, WCM Industries, 8500 Amping Road, Columbus, Maryland 21045, phone (301) 995-1919. Cooperation of individuals and agencies in any manner will greatly assist AWM in completing this useful research project.

Reprinted from ATSA Signal

HOW TO BE HAPPIER, MORE SUCCESSFUL

Ways, guys, did you know a good-morning kiss from your wife can make you happier, healthier and more successful? It also can give you a lift that will transform the rest of your day.

That sound almost too good to be true—but the experts say it is.

So Good for Life

There are other fringe benefits to an insurance study shows the husband who kisses his wife every morning before leaving for work probably will live five years longer than one who doesn't.

Once the husband will have fewer auto accidents, lose up to 50 percent less time from work because of illness and earn $57 per hour for the same work as the non-kissing husband. It's something to consider!

The statistics are available for benefit to kissing wives.

FIELD EVALUATION OF SNOWPLOWABLE PAVEMENT MARKERS

Transportation Research Board Committee on Traffic Safety and Maintenance Construction Operations recently reported on tests conducted during the 1981-82 winter to evaluate various types of snowplovable pavement markers. Five different markers were tested: Stimsonite 96, Dura-Brute, receded markers, Klinray and Primax roadsign.

The report revealed that the 1,800, Dura-Brute and receded markers were acceptable snowplovable markers because the various roadsigns were subjected to both dry and wet nighttime conditions and of the markers proved to be durable when subjected to snowplow operations. Because of its lower cost ($8-15), the receded marker was recommended as the most cost effective. The report indicated that the cost of the other markers was in the range of $16-200 each. The cost of a regular, raised昼夜 sign marker is approximately $3 each.

A full report of the evaluation is contained in Transportation Research Record 933 available from TBR. Reprint from ATSA Signal.

NEW SAFETY BELT PROPOSALS INTRODUCED IN SENATE

A safety belt use package with a "new twist" is now a pack of bills (SB 741-742) is being described after introduction recently in the Michigan Senate. Sponsors of the new proposal, sponsored by Senator C. Crewe (R-Ford City) and William Faust (D-Eastlandville)

The principle change and "new twist" from earlier legislative proposals is found in SB 742, which would require a passenger to vote on the seat belt law at the general election in 1980. Senator 11471 is the actual seat belt bill and is nearly identical to the Millier proposal. Only front seat occupants would be covered under the bill and no points would be assessed for violations. A fine $50 would apply to the seat belt user. The bill is silent on an effective date, but it could become effective in 1982 unless otherwise adopted. If the legislature does not specify a date, the effective date would be 90 days after the end of the current session.

The package was unanimously adopted by the Senate Administration and Rules Committee, chaired by Senator Majority Leader John Engler (R-Mt. Pleasant). The vote was 40-0, with one member absent. The bill now moves to the Senate floor where action is expected shortly. Senate vote are required for passage in the 32-member Senate.

SIGN VANDALISM—NATIONAL PROBLEM

"Sign vandalism has become a costly and often deadly national problem" says Ithaca Chadds and Everett Carter in a paper published recently by TBR.

According to FHWA estimates, total annual direct costs of sign vandalism to the states, counties and cities are $15 million. Indirect costs for injuries and court and liability claims are estimated to be about the same. A recent survey found that in just seven states, 14,000 signs were attributed to vandalism or theft of signs. Approximately 25% of traffic signs must be replaced annually because of vandalism other state, defaced or mutilated them.

There are three major types of sign vandalism according to Chadds and Carter: (1) Destruction of billboards, bottles, bricks, rocks, etc., (2) Vandalism by spray paint and political posters, etc., and (3) Theft of both the signs and the fixtures.

The study is probably the most often vandalized with street name signs running a close second. Actual street name signs that more often stolen are "Yellow Brick Road" (stolen 20 times in one year), "Kern Place" and "Judy Lane" (each vandalized at least six times a year)

The paper evaluates techniques used to combat sign vandalism problems including legal and physical counter measures, educational programs and public information campaigns.

The complete report is contained in Transportation Research Record 926 available from TBR. Reprint from ATSA Signal.
NATIONAL ITE PUSHES AUTOMATIC RESTRAINTS

Washington, D.C.--The National ITE has urged the U.S. DOT to require manufacturers to equip new cars with automatic restraints and to provide incentives to the states to adopt and enforce mandatory safety belt use laws. Calling for a quick end to the delays in the development of final rules, ITE President Melvin B. Meyer stated "We cannot continue to study, research, expound and theorize on every imaginable aspect of each option while the main concern - the deaths and injuries on our nation's highways - continues unabated."

The Institute was responding to a recent set of options regarding the passenger restraint issue published in the Federal Register by the U.S. DOT. ITE pointed to the significant safety impacts in the 32 countries which currently have mandatory safety belt use laws. The passage of such a law in Sweden in 1975 increased belt use from 40% to 80-90%, reducing the risk of fatal injuries by 25%. Current belt usage in the United States by front seat occupants is less than 15%.

While supporting state mandatory use laws, the Institute opposed suggestions that possible passage of these laws obviates the need for requiring manufacturers to install automatic restraints. Although New York recently became the first state to pass such a law, legislatures in nine states have recently voted down mandatory safety belt use bills. Lengthy debates are expected in other states.

Another option raised by DOT would allow each state to choose either manufacturer equipped occupant crash protection or passage of a mandatory safety belt use law. The Institute pointed out that this could result in a constantly changing patchwork of laws, regulations and equipped/non-equipped vehicles across the country.

Complications involved in the selling and reselling of cars, the possibility of a state's rescission of its belt use law, interstate travel, and production and delivery of appropriately equipped/non-equipped cars would confuse everyone.

According to the Institute, requiring manufacturers to equip new cars with automatic restraints while simultaneously encouraging passage of state safety belt use laws would serve to counteract many of the arguments raised against either option. The public would be less likely to try to defeat the automatic restraint system knowing that the law requires the proper use of the system provided. In addition, the public would be more willing to accept the mandatory use laws knowing that the provision of automatic restraints would eliminate the need for positive action to comply with the law.

In opposing suggestions for additional demonstration programs, the Institute explained that this would require a minimum of two years before initial installation, four years of sales, a number of years for data collection and analysis, and additional rounds of proposed rulemaking. Considering the amount of study that has already gone into this rulemaking, another 6-10 years for one more study is not warranted or defensible.

SOLID STATE CONTROLLER SCHOOL

Based on request from traffic engineers, the application for a school on the programming and set up of solid state pretend controllers has been submitted to the Office of Highway Safety Planning.

It was the thought of many engineers that a school would aid greatly in bringing users of this new type of equipment up-to-date and allow for the full capability of these new approaches to control to be used to the best interest of the citizens of the State of Michigan.

Should the request for funding be approved, notice will be sent to all entities of government plus the ITE and INSA mailing list.

By John R. Gray

AAA: CELLULAR CAR PHONES CAN BE CONVENIENCE OR CATASTROPHE

They'll make it possible for motorists to report road emergencies, traffic jams and other information that can reduce traffic aggravation and even save lives.

But cellular car telephones pose a serious safety hazard for Washington area motorists if the phones are used only as their advertisements suggest, AAA Potomac traffic safety experts warn.

"AAA is not opposed to cellular phones in automobiles," says traffic safety manager Norman E. Grimm. "However, we feel that manufacturers need to emphasize how to safely operate this newest technology so that the driver and other motorists are not endangered."

Smiling drivers with their left hand on the steering wheel and their right hand holding a phone are depicted turning "drive time into work time" and "cars into offices" in advertisements which have blanketed the metropolitan area in recent months. Cellular phones are expected to attract 9,400 Washington area customers by the end of 1984 and more than 151,000 by 1995.

The phones represent a technological breakthrough and can be a boon to motorists if used with caution. With an estimated 200 situations per mile requiring an urban driver's attention, the driver's first concern must be the road ahead.

The safest way to use a cellular phone is before and after driving, but for motorists who will attempt to use the phone while driving, AAA Potomac has developed the following safety suggestions. Several cellular phone manufacturers have asked for help in adapting these tips to their own literature and sales demonstrations.

Reprint from AAA World

AAA Tips for Safe Use of Cellular Car Phones
1. Insist on a demonstration of how to use the phones safely during any test drive.
2. Select a model with hands-free microphone option.
3. Install the microphone on the visor directly above your line of vision.
4. Keep both hands on the steering wheel and the phone handset in its cradle whenever the car is in motion.
5. Place calls only when the car is stopped.
6. If you receive a call, assess the traffic situation before answering, then lift the handset briefly to stop the ring and replace the handset to continue the conversation on the hands-free microphone.
7. If talking on the phone while the car is moving cannot be avoided, drive in the slow lane. Keep the conversation brief.
8. Whenever you use a cellular phone while driving, realize that you may be endangering yourself, your passengers and other motorists.

MICHIGAN TO LEAD DISTRICT III

During the next three years, 1985-1987, District III of the Institute of Transportation Engineers will be led by the Michigan Section. This will give Michigan a more significant role in making District III effective in serving the needs of our members. As your representative on the International Board of Direction, I will welcome your suggestions about how the Institute can be more effective in serving its members.

District III could be made a stronger force for the professional growth of our members if contacts between sections were increased. We should continue to emphasize a high-quality technical program at the District Annual Meeting as a means of encouraging this contact.

Cont. page 10
Better contacts between sections will be particularly important as District III prepares to host the International Annual Meeting in Indianapolis during September 1986. Cooperation between sections can be enhanced by giving the District Vice-Chairman more responsibility for coordinating District activities.

Other objectives for District III during the next three years should include:
1. Continuing the practice of having the District Director attend at least one meeting per year in each section.
2. Preparing the next District Director for office by encouraging involvement and familiarity with District activities.
3. Encouraging more District III members to get involved in national committees - particularly Technical Committees.
4. Encouraging submissions from District III for the Section Technical Award and the Student Paper Award.

By Richard F. Beaubien, P.E., District III Director-Elect

**SENTRE A NEW SAFETY BARRIER END TREATMENT**

A new safety barrier end treatment (referred to as SENTRE) is being manufactured by Energy Absorption Systems.

The SENTRE unit consists of interlocking telescoping Thrie-beam fender panels, wide flange posts, slip bases, sand containers, and a redirecting cable. These components form a crashworthy guardrail end treatment which meets test requirements specified in the National Cooperative Highway Research Program (NCHRP). It passes the following tests:

1. Impact at 25 degrees into the beginning of length of need (i.e., beginning of tensioned guardrail) at 60 mph with a 4,500-lb car.
2. Impact at 0 degrees into center nose of the device (0" offset from center line of vehicle) at 60 mph with a 4,500-lb car.
3. Impact at 15 degrees into side of the device midway between nose and beginning of length of need at 60 mph with an 1,800-lb car.
4. Impact at 0 degrees into nose of the device (with 1.25 ft offset from center line of vehicle) at 60 mph with an 1,800-lb car.

In addition, the SENTRE is capable of passing test No. 2 above with the redirecting cable anchored on a 1-1/2-to-1 side slope running parallel to the unit. When hit head-on, the unit is capable of simultaneously collapsing and moving laterally to redirect an impacting vehicle away from the end of the tensioned downstream section of guardrail. The redirecting cable is anchored at both ends which are capable of withstanding a minimum pullout force of 50,000 lbs.

The base plate of each SENTRE post is rigidly held in place by anchors that are capable of withstanding a 15,000-lb shear and 26,500 ft-lbs moment in the longitudinal axis of the SENTRE and 27,000 lbs of shear and 49,500 ft-lbs of moment in the lateral axis of the SENTRE.