President’s Message

It’s a great honor and privilege to serve you as President of ALSITE for 1997. I only hope that I can provide half the leadership that the previous Presidents have provided. A leader will only be as good as the people he has around him, and with the help of the liaisons and committee members listed on the back page and the Board of Directors we should have a great year.

Having talked with several people in ITE that have “been there, done that”, I feel that ALSITE will embark on new ground in 1997. I challenge each of you to contact me or any member of the Board with ideas or issues that you feel we need to address. The first thing I would like to ask is for you to become more involved with the new ISTEA legislation. This is going to be very important to each person in the transportation business.

The Fall Meeting in Tuscaloosa was great. Joe Robinson and David Griffin did a wonderful job, as usual. I encourage each of you to attend the Spring Meeting in Birmingham on March 12, 1997, at the Wynfrey.

If there are any items you feel we need to address in the upcoming year please contact me, and we will try to address them.

James Brown

Southern District ITE Report

I attended the Southern District year-end board meeting in Memphis on December 6, 1996. The highlight of the board meeting was a presentation of the Southern District ITE web site by Michael Reese of the North Carolina State ITE Student Chapter. The Southern District web site appears to be well prepared and will provide a great deal of information to the membership, as well as links to other transportation web sites.

The Annual Southern District ITE Meeting will be held on April 19-23 in Louisville, Kentucky. There are many excellent technical presentations and activities planned for this meeting. I hope to see each of you in Louisville. If I can assist anyone with information regarding the Southern District or the upcoming Annual Meeting, please let me know.

Jim Meads

Election Notice

ALSITE’s Jim Meads has been nominated to run for ITE Southern District Secretary/Treasurer. Please remember Jim, and CAST YOUR BALLOT!

inside this issue...

Fall Meeting Minutes.................................................................Page 2
Calendar of Events........................................................................Page 4
Roundabouts: A Direct Way to Safer Highways................................Page 5
Pavement Markings and Unfunded Federal Mandates......................Page 7
Fiber Optics in the Interconnect System.........................................Page 8
Invisible Traffic Control Devices.......................................................Page 9
Professional Services Directory.......................................................Pages 10 & 11
Committees, Representatives, Liaisons.............................................Page 12

...plus much more
Fall Meeting Minutes
October 10, 1996
Tuscaloosa, Alabama

I. Call to Order:
The meeting was called to order at 12:35 p.m. by
President Bruce Thomason.

II. Minutes:
President Thomason called for a motion to accept
the minutes of the June 14, 1996 Annual Meeting as
published in the Fall 1996 Newsletter. Bruce wanted to
add to the minutes the results of the election for Alabama
Section Officers. James Brown - President, James Foster
- Vice President, Robby Anderson - Secretary/Treasurer,
Leo Bennett - Affiliate Director, Tim Williams - Assistant
Affiliate Director. Joe Robinson made the motion, seconded by Stacey Glass.

III. International Director ITE Address:
International ITE Director Hibbett Neal stated
how good it was to be at this meeting among old friends in
the Alabama Section.

The newly elected International Director will be
Gaye Sprague from South Carolina.

ITE has a membership of approximately 12,000
including a 20-member Board of Directors, with a staff of
only 20 employees. ITE has a current annual budget of
over $3 million. Hibbett appealed to the Affiliates to join
International ITE. ITE has 12 Technical Councils
involving approximately 4,000 members. There is a lot
going on! Please join! ITE has over 300 technical
publications, the ITE Journal publication is now available
on CD ROM, and ITE is on the World Wide Web (www.)

The 1997 Annual International ITE meeting will be
in Boston, Massachusetts and the Annual Southern
District ITE meeting will be in Louisville, Kentucky.

The ISTEA bill is slated for Federal Legislation
next year and this will be a critical time. ITE has a Federal
Coordinator on Capitol Hill as a representative to keep up
on the direction ISTEA is going and to help promote ITE
interests. ITE has a position paper in ISTEA and this is
available on the INTERNET or by contacting International
ITE. This bill is a very important issue, please get
involved!

IV. Officer's/Director's Reports:
A. Secretary/Treasurer's Report:
1. The Secretary/Treasurer’s report from
June 12 to October 10, 1996, was reported by the
Secretary/Treasurer James Foster:

<table>
<thead>
<tr>
<th>Treasury balance on June 12, 1996</th>
<th>$7,889.03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipts since June 12, 1996:</td>
<td></td>
</tr>
<tr>
<td>Dues</td>
<td>$1,104.00</td>
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<tr>
<td>Annual Meeting Net Proceeds</td>
<td>$547.31</td>
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<tr>
<td>TOTAL RECEIPTS</td>
<td>$1,651.31</td>
</tr>
<tr>
<td>Expenditures Since June 12, 1996:</td>
<td></td>
</tr>
<tr>
<td>Printing Stationary</td>
<td>$89.32</td>
</tr>
<tr>
<td>Printing Newsletter</td>
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</tr>
<tr>
<td>Newsletter Postage</td>
<td>$57.60</td>
</tr>
<tr>
<td>Wayne Curry (error in dues)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Travel Expenses for Edgar Leght</td>
<td>$200.00</td>
</tr>
<tr>
<td>Slides for Annual Meeting</td>
<td>$19.04</td>
</tr>
<tr>
<td>ALSITE Scholarship Fund</td>
<td>$290.00</td>
</tr>
<tr>
<td>(Spring Meeting)</td>
<td></td>
</tr>
<tr>
<td>Auburn ITE Student Chapter</td>
<td>$150.00</td>
</tr>
<tr>
<td>Tax Preparation</td>
<td>$265.00</td>
</tr>
<tr>
<td>TOTAL EXPENDITURES:</td>
<td>$1,388.23</td>
</tr>
<tr>
<td>TREASURY BALANCE</td>
<td>$8,152.11</td>
</tr>
</tbody>
</table>
on October 10, 1996

2. The board acted on two reinstatements for
member:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliate I</td>
<td>1</td>
</tr>
<tr>
<td>Member</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Current Membership:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliate I</td>
<td>47</td>
</tr>
<tr>
<td>Affiliate II</td>
<td>36</td>
</tr>
<tr>
<td>Member</td>
<td>99</td>
</tr>
<tr>
<td>Retired</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>186</td>
</tr>
</tbody>
</table>

B. Vice President’s Report:
President Thomason reported for James Brown
that at the Board meeting a discussion was made by Nancy
Hudson about the 1999 District ITE meeting that will be
held in Montgomery at the Embassy Suites Hotel. There
are many committees that need volunteers. Please join!

Nancy also brought some materials involving
school safety from the City of Birmingham and Jefferson
County. She is asking our Section to be more involved in
safety issues, taking a direction/position and maybe setting
a goal to pursue.

C. District 5 Representative Report:
District 5 Representative Jim Meads stated that
Nancy Hudson, Bubba Bowden, Paul Weldon and he met
with the management staff at Embassy Suites and the
Chamber of Commerce in Montgomery, the site location
for the 1999 Southern District Annual Meeting.

Jim reported that he will be attending the year end
District ITE Board Meeting in Memphis on December 6,
1996. The 1996 Annual Southern District ITE Meeting
will be April 19-23, 1997 at the Hyatt Regency in
Louisville, Kentucky.
Jim is requesting that everyone fill out the professional activities questionnaire at the business meeting so we can use this in our annual report. James Brown will need this information no later than December 1, 1996.

Dan Turner is chairing a committee to see how to lighten the workload of the District Secretary/Treasurer. There is a Past-President committee looking into ways to increase membership.

The North Carolina State Student Chapter is setting up a “home page” on the INTERNET for the District and will have draft information for the December meeting.

V. Committee Reports:
   A. Scholarship Foundation Report:
      Joe Robinson reported that the Scholarship Fund balance as of October 1, 1996 was $52,686.17.
   B. Newsletter:
      Newsletter Editor Stacey Glass reported that Becky White will be assisting with the newsletter publication and that he wanted to welcome her to the staff. Stacey needs articles and information for future newsletters.
   C. Technical:
      John McCarthy reported that there will be an Alabama Technology Transfer seminar on “The Road to Better Traffic Control”, how to read the MUTCD.
      The September edition of the Alabama Transportation Newsletter is now available and is on the INTERNET.
      The ITE Student Chapter was a big help in sending mail-outs for an “Incident Management” seminar that was targeted toward 240 people. Seventy (70) ITE members, Police Chiefs and others attended.
      The Auburn Civil Engineering Department, Technology Transfer Center, and the ITE Student Chapter are all now on the INTERNET.
   D. Local Arrangements:
      Joe Robinson reported that we had a pre-registration of 65 and a total registration of 78 that attended this meeting. Bruce Thomason thanked Joe, David Griffin, and all those who helped put this program together.
   E. Meeting/Site Selection:
      Bruce Thomason reported that the 1997 Spring Meeting would be held in Birmingham and Annual Meeting in Gulf Shores.

VI. Old Business:
   At the last business meeting a discussion was made about involving ABD members on the Board of Directors. Bruce Thomason reported that Jim Meads gave a report to the Board of Directors about the use of ABD members serving on the Board. Jim reported that the North Carolina Section uses ABD members (without changing the by-laws) by allowing them to serve on a rotation basis for the positions of Assistant Affiliate Director and Affiliate Director. The Board voted on this rotation process and will advise the Nominating Committee to start this rotation with Affiliate I members at the next Annual Meeting. The first nomination for the ABD members will be for the Assistant Affiliate Director position only. Having ABD members more involved with the Board should help strengthen our Section.

VII. New Business:
   Bruce Thomason reported on the need for a strategic plan for our Section. He stated that Nancy Hudson had addressed at the Board Meeting the need for our Section to be more involved in safety issues within the state. The use(s) of the current Treasury balance of $8,000 was discussed. These type issues, along with the current Scholarship Program with its high balance and its ongoing surcharge per meeting, are the type of areas that should have a future direction/plan. How we go about doing this is the question. No decision has been made as to how to proceed. Gerald Anderson asked if this is something that International ITE could help with. Hibbett Neal said he would check into this. Jim Meads has a copy of the strategic plan from North Carolina. Jim asked if this is a possible program meeting topic? The membership agreed. Joe Robinson stated that we should be careful in proceeding without checking out various sources.

VIII. Student Chapter:
   Brian Little reported that the Student Chapter “home page” is just starting on the INTERNET and can be found at www.eng.auburn.edu/organizations/ite

IX. Adjourn:
   The motion to adjourn was made by Joe Robinson, seconded by Gerald Anderson. The motion was approved by voice vote. The meeting adjourned at 1:10 p.m.

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Did You Know?

The oldest U.S. bridge in continuous use was built in 1697. The stone-arch Frankford Avenue Bridge crosses Pennypack Creek in Philadelphia, PA. A 3-span bridge with a total length of 75 feet, it was constructed as part of the King's Road, which eventually connected Philadelphia to New York.
Variable Message Sign Costs  
American Airlines $20 Million

A jury recently ordered American Airlines to pay two men a total of $20 million for injuries they sustained in a traffic accident outside the Dallas-Fort Worth International Airport. The men alleged that the accident was the result of another vehicle stopping in a traffic lane to view a 1,400 square foot variable message sign owned by American Airlines. This sign and others like it provide updated flight information on the main thoroughfare through the airport. According to the Washington Post, since September of 1994, when the lawsuit was filed, police blamed the signs for 29 accidents and 22 injuries.

Source: ITE Washington Weekly updates from the Internet.

ABD Forum  
1997 ALSITE Annual Meeting

Any ABD member that wishes to participate in the ABD Forum at the 1997 Annual Meeting in Gulf Shores, Alabama, on June 12, please contact James Foster at (334) 690-8595 as soon as possible. A five-minute Product / Service Presentation will be allowed for each business. Please show your support!

! NOTE!
Participants will be listed on a “first come, first serve basis” until the approximate one-hour allotment for this session is completed.

surfing? Look for these transportation web sites on the internet, ...

ITE www.ite.org
ITE Southern District www2.ncsu.edu/ncsu/stud-orgs/ite/sdite
Bureau of Transportation Statistics www.bts.gov
U.S. DOT www.dot.gov
Transportation Research Board www.nas.edu/trb/index2.htm/
ITS America www.itsa.org
AASHTO www.aashto.org/main/publ.htm
Roundabouts: A Direct Way to Safer Highways

Roundabout Safety Comes to America
The superior safety record of modern roundabouts is well-known in Western Europe and in most British-influenced countries around the globe. Still, many in North America question whether drivers who are unfamiliar with this type of intersection can safely adapt to it.

But many American highway engineers have become advocates for modern roundabouts, and they are designing and building roundabouts to reduce accidents and increase capacity. Modern roundabouts have recently been built in California, Colorado, Florida, Maryland, Nevada, and Vermont. Additional modern roundabouts are proposed for freeway interchanges in Maryland and California.

What Is a Modern Roundabout?
The era of modern roundabouts began in the United Kingdom in 1956 with the construction of the first “yield-at-entry” roundabouts. In 1966, a nationwide yield-at-entry rule launched the modern roundabout revolution. Australia and most other British-influenced countries soon built modern roundabouts. Countries such as the United States, where people drive on the right side of the road, were slower to follow, but many of these countries have been rapidly catching up.

Yield-at-entry is the most important operational element of a modern roundabout, but it is not the only one. Deflection of the vehicle path and entry flare are also important characteristics that distinguish the modern roundabout from the nonconforming traffic circle, which does not have these characteristics. Other features include splitter islands at all approaches (to control entry speed and deter left turns), good sight distance, good lighting, good signing, no crosswalks across the circulatory roadway, yield lines downstream of the pedestrian crossings, and no parking in the roundabout. All of these design characteristics must be met for a traffic circle to qualify as a modern roundabout.

Roundabouts are designed in different sizes to serve various objectives and conditions. Even mini-roundabouts (with a diameter of 25 meters or less) are effective at reducing speed and improving safety. Small to medium roundabouts are 25 to 40 m in diameter. The larger roundabouts (with a diameter greater than 40 m) provide greater separation of traffic and a higher capacity.

Why Are Roundabouts Safer?
The primary characteristics of the modern roundabout reduce many of the safety hazards of traditional intersections and nonconforming traffic circles. The physical configuration of a modern roundabout, with a deflected entry and yield-at-entry, forces a driver to reduce speed during the approach, entry, and movement within the roundabout. This is contrary to an intersection where many drivers are encouraged by a green or yellow light to accelerate to get across the intersection quickly and to “beat the red light” and contrary to old traffic circles where tangent approaches also encourage, or at least allow, high-speed entries.

Another important safety factor is that the only movement at an entry and an exit of a roundabout is a right turn, thus reducing the potential frequency and severity of accidents compared to accidents typically occurring during left turns and when traffic crosses an intersection in perpendicular directions.

Conclusion
Modern American roundabouts have produced remarkable safety records. Since this experience is similar to the roundabout experience reported in other parts of the world, the safety of roundabouts compared to signalized intersections and old traffic circles has been well established. As a result, the number of roundabouts in the United States is expected to increase in the next decade.

ALSITE SPRING MEETING
Wednesday, March 12, 1997
Wynfrey Hotel @ Riverchase Galleria
Hoover, Alabama

Program Schedule

8:00 - 8:30 A.M.  Registration

8:30 - 8:45 A.M.  Welcome
                  The Honorable Frank Skinner

8:45 - 9:30 A.M.  Sain Associates' Strategic Plan
                  James A. Meads, P.E., Sain Associates

9:30 - 10:15 A.M. Federal Highway Administration Strategic Plan for Safety
                  Bill Van Luchene, Federal Highway Administration

10:15 - 10:30 A.M. Break

10:30 - 11:15 A.M. Chief Ladiga Rails-to-Trails Project
                    Jack Plunk, East Alabama Regional Planning & Development Commission

11:15 - 12:00 A.M. U.S. Highway 31 @ Interstate 459 Interchange Modifications
                    Darrell Skipper, P.E., Rust Environment & Infrastructure, Inc.

12:00 - 12:45 P.M. Lunch

12:45 - 1:30 P.M.  ALSITE Business Meeting


“Children At Play” Signs - Not A Good Idea

Some neighborhoods often request such signs in order to help protect their youngsters who may be playing in or near the traveled way. However, studies have shown no evidence of having reduced pedestrian accidents, reduced vehicle speeds, or reduced these type signs have failed to achieve the false sense of security. The Manual on Uniform Traffic Control Devices (MUTCD) states that non-uniform procedures and decisions, and can contribute to accidents. The Traffic Control Devices Handbook states that these signs should be removed and proper signing should be installed.
Pavement Markings and Unfunded Federal Mandates

Congress, in the Fiscal Year 1993 Transportation Appropriations Bill, required the Manual on Uniform Traffic Control Devices (MUTCD) to be amended to include a national standard defining which roadways must have center line and/or edge line markings.

Most traffic engineers agree that the existing MUTCD 3B-1 wording “center lines are recommended...” is somewhat unclear and provides no significant guidance. In 1988 the Federal Highway Administration attempted to require center lines on all rural roads greater than 18 feet in width and speed limits of greater than 35 mph and on through roadways with Annual Daily Traffic (ADT) volumes greater than 50. There was an outcry of grassroots opposition to such stringent mandates and the proposal was not adopted.

In 1992, the Markings Technical Committee (MTC) of the National Committee on Uniform Traffic Control Devices (NC) formed a “state-of-the-practice” task force to survey all 50 states and selected cities and countries. As a result of their findings, the NC developed recommendations for center line and edge line warrants. The warrants followed the proposed MUTCD three-tiered format of standard (shall), guidance (should), and option (may) sections for both urban and rural roadways. The warrants were based on such factors as functional classification, roadway width, and ADT.

The August 2, 1996, Federal Register contains the FHWA’s proposed center line and edge line warrants. Their warrants are similar to the NC’s except in a couple of areas as explained below. It is a very clear and concise proposal; however, there are two areas which may be of significant impact to urban traffic engineers. The FHWA lowered the NC’s traffic volume recommendation for urban roadway-mandated center lines (shall have) from 5,000 ADT to 2,000 ADT, and the guidance (should have) center lines from 2,500 ADT to 1,000 ADT. Their reasoning is entwined in a request from the American Traffic Safety Services Association (ATSSA) who surveyed State Transportation Agencies and determined that almost 92% of all state highways have center lines (generally only unpaved state highways and those with ADTs less than 300 do not have center lines).

The NC’s task force surveys indicate that this is fair and reasonable for states; however, cities generally want higher volumes before a center line is mandated. Their reasoning is that in urban areas, vehicle guidance is generally obtained more so with street lighting, parked cars, curb and gutter, etc., than with paint at the street’s center line.

Given our litigious society, several areas of concern may be anticipated from urban traffic engineers:

- The mandatory requirement for center lines on roadways with greater than 2,000 ADT would place an onerous burden to know traffic volumes on a large number of roadways.
- This relatively low volume would allow for no engineering judgment (i.e., roadway width, lighting, curb and gutter, etc.). Consequently, in most urban areas a significant number of additional roadways could require pavement markings, and engineers would lose some flexibility in applying limited resources for improved safety in areas under their authority.
- The FHWA is in the process of developing retroreflectivity requirements for pavement markings. Coupling these requirements with the warrants would have a significant impact on the quantity and quality of pavement markings that agencies place and maintain on their roadways.
- Many urban roadways allow curbside parking on both sides of the street and carry more than 2,000 ADT. Many of these streets are too narrow to allow a moving vehicle to pass a legally parked vehicle and stay to the right of the center line when the center line is located in the center of the roadway. A typical 30-foot urban street would have only 7 feet between a center line and a parked car. This center line has a tendency to guide a moving vehicle into a parked car. Perhaps a minimum lane width requirement should be added as an additional variable or factor to consider before applying center line markings (regardless of the ADT). Example: A center line marking shall not be applied unless the resulting travel lanes are a minimum of 10 feet wide at all times.

Please keep in mind that the 2,000 ADT would be a mandatory (shall) requirement. If engineers like numbers because of the guidance they provide, then the second section which states that center lines should be placed on urban roadways with an ADT of 1,000 or more provides this guidance while still allowing for engineering judgment and not degrading the safe and efficient use of highways. While opposition to the volume in this guidance section was not as great as the mandatory section, there were still strong feelings to this number being lowered from 2,500, which many felt was a more reasonable volume.

If you join us in this concern, then it is imperative that you make your feelings known to FHWA. Please respond with your written, signed comments to FHWA Docket Number 96-15, Federal Highway Administration, Room 4232, HCC-10, 400 Seventh Street SW, Washington, DC 20590.

Fiber Optics in the Interconnect System
By: David Jones

In its simplest terms, fiber optics is a communications medium linking two electronic circuits. The fiber optic link may be between a computer and its peripherals, a traffic controller and its controlling computer or master controller, video and message sign control: any type of digital electronic data can be transmitted via fiber optics.

Why do we go to the trouble of converting signals to light and back? Why not just stay with copper wire? The answer lies within the list of advantages of fiber optics over copper.

*Wide Bandwidth - very high data-carrying capacity
*Low Loss - signals can be transmitted much longer distances without being repeated or reconditioned.
*Electronic Immunity - glass is non-conductive therefore no interference or cross-talk. No lightning damage and no grounding!
*Light Weight - interconnect fiber cable weighs between 60 to 150 pounds per 1000 ft.
*Small Size - cable size ranges from 0.3 inches to 0.75 inches.

Fiber Basics:
Fiber is made up of basic divisions no matter what the core size. In the DOT environment we primarily use two sizes of fiber: 62.5/125 multi-mode and 8.3/125 single mode. When reviewing quotations you will note that the industry standard procedure for writing fiber descriptions are as follows:

**MULTI-MODE FIBER:**
62.5/125 = core diameter/cladding diameter
850/1300nm = dual window tested - guaranteed operation in both windows noted
3.5/1.0 dB/km = attenuation measured in dB per kilometer - 3.5 dB loss in 850nm window/1.0 dB loss in 1300 nm window
160/500 MHz@km = certified bandwidth factory assurance and test
100 kpsi = optical fiber tensile strength

**SINGLE MODE FIBER:**
8.3/125 = core diameter/cladding diameter
1310/1550nm = dual window tested
0.4/0.3dB/km = attenuation in 1310nm window and attenuation in 1550nm window
100 kpsi = optical fiber tensile strength

Cable Types:
There are two primary cable types: tight buffered and loose tube. These cable types refer specifically to the external method the manufacturer has selected to protect the individual buffered fibers. Each type is designed for specific applications and environmental concerns.

The loose tube type uses a hard plastic tube having an inside diameter several times that of the fiber. One or more fibers lie within the buffer tube. The tube isolates the fiber from the rest of the cable and the mechanical forces acting on it. The buffer tube becomes the load-bearing member. As the cable expands and contracts with changes in temperature, it does not affect the fiber as much. A fiber has a lower temperature coefficient than most cable elements, meaning that it expands and contracts less. Typically, some excess fiber is in the tube. In other words the fiber in the tube is slightly longer (2%) than the tube itself. Thus the cable can easily expand and contract without stressing the fiber.

The tight buffer has a plastic directly applied over the buffer coating. This construction provides better crush and impact resistance. It does not, however, protect the fiber as well from the stresses of temperature variations. Because the plastic expands and contracts at a different rate than the fiber, contractions caused by variations in temperature can result in loss-producing microbends. This construction is much more flexible than the loose tube.

continued on page 9
ALABAMA SECTION ITE
1997 TRANSPORTATION SAFETY AWARD

Nominee's Name: ____________________________________________

Position Title: ______________________________________________

Employer's Name: ___________________________________________

Business Address: ____________________________________________

Immediate Supervisor's Name: _________________________________

Briefly state this individual's contributions to transportation safety: ______________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

The Nomination Committee may want to discuss this nomination with you. Please provide the following information:

Name of Nominator: ____________________________________________

Address: ______________________________________________________

Telephone Number: ____________________________________________

Relationship to Nominee: _______________________________________

Please complete this form and return to:
Bruce Thomason, P.E.
Division Maintenance Engineer
Alabama DOT
1701 Beltline Highway, N.
Mobile, Alabama 36618
ALABAMA SECTION ITE
1997 TRANSPORTATION ENGINEER OF THE YEAR

Nominee’s Name: ________________________________

Position Title: __________________________________

Employer’s Name: ________________________________

Business Address: ________________________________

Immediate Supervisor’s Name: ____________________________

Briefly state this individual’s contributions to advancing transportation engineering in Alabama:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

The Nomination Committee may want to discuss this nomination with you. Please provide the following information:

Name of Nominator: ________________________________

Address: ________________________________

Telephone Number: ________________________________

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Please complete this form and return to:
Bruce Thomason, P.E.
Division Maintenance Engineer
Alabama DOT
1701 Beltline Highway, N.
Mobile, Alabama 36618

Spring 1997
Fiber Optics, continued from page 8

Based on these points we utilize loose tube for outside plant applications (OSP). The tube is modified by filling of the tube with water resistant gel for additional protection of the fiber. The tight buffer is for indoors or in-plant (IP) applications.

Cable Construction
Strength members add mechanical strength to the fiber cable. During and after installation, the strength members handle the tensile stresses applied to the cable so that the fiber is not damaged. The most common strength member is Kevlar. The jacket in fiber optic cable serves the same function as in copper cable and is made of the same jacket compounds MDPE or HDPE. Armoring, both double and single, is available for protection from rodents and when cable is to be direct buried. Cables may also be manufactured with or without an attached figure 8 messenger.

Invisible Traffic Control Devices

During the development of the pending interim LED traffic signal purchase specification, a working group learned of a serious conflict between LED devices and certain sunglasses available to the driving public. Because the various light-emitting diode (LED) technologies each produce light which is essentially monochromatic, eyeware with coatings which filter most or all of the light at a particular wavelength can render an LED traffic signal indication (or other LED-based traffic control devices) invisible to a driver using such eyeware.

To minimize the probability of such an occurrence, the Sunglass Association of America (SAA) has proposed that all narrow-band light sources (including LEDs) used in traffic control devices have a dominant wave-length between 500 and 650 nanometers (nm) and that the eyeware manufacturers limit the percentage of light filtered in the same range.

Until an NCHRP study is completed in April 1998, it is recommended that organizations using or proposing to use traffic control devices which incorporate LEDs as the light source, review this issue with the manufacturers and/or suppliers of the devices in the context of the action proposed by the SAA.

Source: Darcy Sullivan, Traffic Engineering Council Update, Fall 1996.

In Search of the Three-Vehicle Household

The number of households with three or more vehicles has grown by almost 1.8 million households, despite a declining share of all households. Almost 16 million households are in this category today.

Who are these people and where are they? For the most part they appear to be large households with two or three drivers and are frequently located in rural farming communities. The following table lists the states with the highest percentage of households with three or more vehicles.

<table>
<thead>
<tr>
<th>State</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyoming</td>
<td>27.4</td>
</tr>
<tr>
<td>South Dakota</td>
<td>25.4</td>
</tr>
<tr>
<td>Montana</td>
<td>25.2</td>
</tr>
<tr>
<td>Utah</td>
<td>24.3</td>
</tr>
<tr>
<td>North Dakota</td>
<td>23.6</td>
</tr>
<tr>
<td>National Average</td>
<td>17.0</td>
</tr>
</tbody>
</table>

The midwestern farm states also tend to be above the average. New York, the state with the lowest overall level of vehicle ownership, is lowest in this area as well, with only 11% of households in the three-vehicles-and-above category. Only California seems to have high shares of urban households with three or more vehicles.

Source: Commuting in America II. © 1996 Eno Transportation Foundation, Inc., page 34.
1997 ALSITE Board of Directors...

Immediate Past President:
James B. Thomason, P.E.
Division Maint. Engr.
Alabama DOT
1701 Beltline Hwy., N.
Mobile, AL 36618
Telephone: (334) 470-8230

President:
James R. Brown, P.E.
Consoer Townsend
Envirodyne Engineers, Inc.
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1997 ALSITE Standing Committees, Representatives and Liaisons...

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Program Liaison:
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Jim Stewart (334) 943-1541

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Robert Adams (334) 242-6122
Tim Taylor (205) 554-3258
Nancy Hudson (205) 254-2450
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Bob Vecellio (334) 844-6286
Jill Pitts (205) 254-2450

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Lisa Ray (334) 242-6421

ITE Legislative Committee:
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Dale Lenoir (334) 242-6165

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Past Presidents:
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