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**CENTER**

**AT AUBURN UNIVERSITY**

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### Alabama Transportation Newsletter

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## J. Fred O'Brien, Jr.

### 1929-2011



*The Alabama Technology Transfer Center was saddened to learn of the death of J. Fred O'Brien who passed away on January 9. Fred prepared the proposal to FHWA to get the initial funding for the Alabama T2 Center in 1983. Subsequently, Alabama was one of the first ten Centers established.*

*Fred was very enthusiastic about the potential for Technology Transfer in Alabama and always promoted continuing education. He thoroughly enjoyed working with personnel from FHWA, ALDOT, Association of County Engineers of Alabama and the Alabama Section ITE.*

*Fred was truly a people person who enjoyed his work, looked forward to being on the road and was, of course, a great story teller. In fact, I learned more about the history of Auburn University and in particular, AU football, when traveling in the van with Fred.*

*Fred worked effectively with FHWA at the national and regional levels and became a friend to all of the eight southeastern LTAP Regional Directors. He also played an effective role in helping to get the National LTAP Association established.*

*This year the Alabama T2 Center co-sponsored with ALDOT and the Civil Engineering Department the 54<sup>th</sup> Annual Transportation Conference. Over the years, Fred became the "face" of the Conference, attended to its many details, and thoroughly enjoyed talking to all of the conference participants.*

*Fred was a "natural" and an absolutely good fit for continuing education. Even with a degree from AU in Mechanical Engineering, he certainly worked enthusiastically with those of us in Civil Engineering.*

*Fred retired from the University in 1992. His legacy will continue in the Engineering Continuing Education Office, the Alabama Technology Transfer Center, and even the National LTAP Association.*

*Larry Sellers and I extend our sympathies to Fred's lovely wife Laura and children Michael and Becky.*

*Bob Vecellio*  
*Director*  
*Alabama T2 Center*

## Reverse Angle Parking A State of the Practice on the Internet

In many cities around the United States, reverse angle parking or back-in angle parking is being considered for downtown areas. In some cities it has been in place for many years. It is also mentioned in context sensitive solutions as a method to overcome sight distance concerns and bicycle safety issues.

There is no sign to cover this parking condition in the Manual on Uniform Traffic Control Devices. A sign used in Milwaukee, WI, appears to be the closest thing to a standard in the Regulatory – Parking (R7) series. In the MUTCD, the positive form of a message is done in black letters on a white background. Some cities in the United States have used a non-standard sign with white letters on a blue background. Their message indicates that reverse angle parking is as “easy as 1-2-3”. Vendors from Australia show similar signs in red letters on a white background.

Mobile, AL, has three locations where they have used this technique and one in an employee parking lot. According to City Traffic Engineer Jennifer White, the driver’s confusion over backing in or heading in was present at first. But since the City has used the signs reading NO HEAD-IN PARKING, the problem has been reduced. They used one sign at the beginning of the block, one at midblock and one at the end of the block. Some local publicity was also generated to get drivers accustomed to the new technique.

The City of Montgomery has been asked to consider reverse angle parking in a downtown location. A review of the experiences was done on the Internet and followed up with several e-mails. Some of these cities have published reports on the subject. Other cities had newspaper articles available to document their experience. The public relations effort that accompanied the initial use of this technique was also documented.

A list of Internet resources is provided for further reference:

Baltimore, MD - A set of questions and answers has been prepared by the City of Baltimore Transportation Department for the Fells Prospect Neighborhood  
<http://www.fellsprospect.org/ReverseangleparkingFAQ.html>

Baltimore, MD - In the Hampden area near Baltimore, MD, reverse angle parking was introduced with a public relations campaign and custom signs.  
[http://www.hampdenhappenings.org/HCC\\_WEB/Zoning\\_Pdf/RAP/The\\_Art\\_Of\\_Reverse\\_Angle.pdf](http://www.hampdenhappenings.org/HCC_WEB/Zoning_Pdf/RAP/The_Art_Of_Reverse_Angle.pdf)

Brunswick, ME – A public relations brochure has been developed to acquaint drivers with the new procedure. How it works and the benefits are featured along with a list of 24 cities in which it has been implemented.  
<http://www.brunswickme.org/dpw/backinparking.pdf>

Calumet, MI – Reverse angle parking is being tried. The plans were announced in a local newspaper.  
<http://www.mininggazette.com/page/content.detail/id/506269.html?nav=5006>

(Continued from page 2, Reverse Angle Parking...)

Collingwood, Ontario, Canada – City council voted to rescind the reverse-angle parking trial that was implemented in 2007.

<http://www.theenterprisebulletin.com/ArticleDisplay.aspx?e=3147554>

Davis, CA - A study report for the UC Davis area includes dimensions for back-in/head-out parking on the right hand side. The study was done by a consulting firm in San Francisco, CA. These dimensions account for a 6 ft bike lane adjacent to the angle parking. This lane also serves as a buffer for vehicles accessing the angle parking not to intrude on the adjacent lanes. The report lists 26 locations around the country that have back-in/head-out parking.

[http://lda.ucdavis.edu/LDA191/Course%20Handouts%20%26%20Readings/05-Back\\_in\\_Diagonal\\_Parking.pdf](http://lda.ucdavis.edu/LDA191/Course%20Handouts%20%26%20Readings/05-Back_in_Diagonal_Parking.pdf)

Davis, CA – City staff recommends against back-in/head out parking on Second St in downtown.

[http://davisvanguard.org/index.php?option=com\\_content&view=article&id=3715:staff-report-recommends-against-pursuing-reserve-angle-parking-on-second-street&Itemid=86](http://davisvanguard.org/index.php?option=com_content&view=article&id=3715:staff-report-recommends-against-pursuing-reserve-angle-parking-on-second-street&Itemid=86)

Encinitas, CA – City Council considers several downtown parking solutions. Reverse angle parking is one of the more controversial issues.

[http://thecoastnews.com/view/full\\_story/830788/article-City-looks-to-create-parking-downtown](http://thecoastnews.com/view/full_story/830788/article-City-looks-to-create-parking-downtown)

Milwaukee, WI – Back-In angle parking is implemented after four years of discussion. The sign reads BACK-IN PARKING ONLY as a black & white regulatory sign in the R7 series.

<http://onmilwaukee.com/market/articles/reverseparking.html>

Newnan, GA – City Councilman proposes reverse angle parking on US 29 in Coweta Co. GA. A DOT Traffic engineer endorses it. City Manager seems opposed to the idea.

<http://www.times-herald.com/Local/Shell-Reverse-angle-parking-safer-1382704>

Salt Lake City, UT - A set of questions and answers on reverse angle parking have been provided by Salt Lake City Division of Community and Economic Development.

<http://www.slcgov.com/transportation/Parking/RAP.htm>

(Prepared by John R. McCarthy, P.E., City of Montgomery, AL)

## Safety is a Big Deal

“Be careful,” my wife said as I headed out the front door. “I will,” I promised. An hour later I was in an ambulance beginning to feel the blessed pain-relieving effects of a 2 mg dose of dilaudid as a paramedic pushed the narcotic into a vein in my left arm.

Six hours after that, I was listening to a surgeon explain that the top of my right tibia (the part of my shin bone that holds my thigh bone in place when I’m standing) was shattered. “Your leg is a mess,” he said. “You’re going to be here for awhile.” Shoot.

“Here” was the orthopedic trauma unit of the Essentia Health Hospital in Duluth, MN. “Awhile” ended up being 12 days. It took five surgeries, two titanium plates and 24 screws (X-ray at right) to put my leg back together.

The date was September 6, 2010–Labor Day. I had fallen 12 feet off a ladder that I had haphazardly propped from my low-slope garage roof to my steeply-pitched house roof. The ladder slipped, I fell, and my tibia shattered.

After several weeks of rest and many, many painful sessions of physical therapy, I was walking with a limp by Thanksgiving. By Christmas I was working out regularly and even skate-skiing. I was pleased with how quickly I had healed. But it wasn’t over.

In mid January my knee swelled up and I spiked a high fever. Within days I was back in Duluth. The same surgeon who put my tibia together in September had to undo everything. “Staph infection,” he explained. Seven days and two surgeries later, I returned home. After one more surgery later this month, more rest, and more physical therapy, I should be able to walk again by summer. Until then, I’ll get around with crutches.

When I stop to think about it, I’m amazed at the impact of that one foolish decision to climb a ladder I knew was not safe. I haven’t been able to go full speed at anything since I left the house last Labor Day.

Safety is a big deal. Working in the transportation field I hear about it all the time. Now I understand. At best, working in an unsafe manner (or carelessly) can result in a great deal of inconvenience and pain. Worst case, it can be deadly. I’m very thankful that my experience has only been painful and inconvenient.

As construction season ramps up in the coming months, I encourage you to do as I say, not as I did. And listen to my wife. “Be careful,” she says.

(Prepared by John Ryyanen, Michigan Tech Transportation Institute, for “The Bridge”, LTAP Newsletter, Michigan Technological University, March 2011)

## Children at Play Signs—Not a Good Idea

Traffic signs are a key part of our transportation network. They provide information to drivers, pedestrians and bicyclists about the rules of the road such as where drivers must stop and the permitted speed limit. Street name and directional signs help us find our desired destination. And when a hazard is present in or near the road, warning signs are there to caution us. Without good signage we might find ourselves lost, in a ditch, or stopped by law enforcement.

Proper signage also helps make communities more liveable and streets safer, something most residents tend to want. Sometimes residents view the street in front of their homes as more than just a place for cars. They may use the road as a walking path, a place to stop and chat with neighbors, or an extension of their front yard where they allow their children to play. Often, residents make requests to road agencies for additional signs which they believe will make their community safer.

One request that many road agencies receive is for “CHILDREN AT PLAY”, “SLOW CHILDREN AT PLAY”, or “SLOW CHILDREN” signs. Residents often argue that children play in or near the road, and there needs to be some warning given to drivers. Without these signs, some feel, children are at risk. Based on these arguments alone, it may seem logical that “CHILDREN AT PLAY” signs should be installed. However, there are other issues that need consideration.

The Manual on Uniform Traffic Control Devices (MUTCD) is a federal manual that has been adopted by the State of West Virginia as law. The intent of the manual is to give roadway agencies a set of standards to help make roads safer. It is the source for when and where a sign should be installed and



which sign it should be. The MUTCD does not include “CHILDREN AT PLAY” signs or any variation. But why is this?

There are many reasons that “CHILDREN AT PLAY” signs are not recommended. These are just a few.

- They are typically designed to look like warning signs, diamond shaped and yellow with a black legend. Other warning signs provide information on the specific location of the hazard (pedestrian crossing, curve, etc.). “CHILDREN AT PLAY” signs do not give a specific location. They merely tell the driver that kids may be in the road somewhere.

- If you install “CHILDREN AT PLAY” signs in some neighborhoods and not others, drivers may be led to believe that there are no

children in the areas without signs, making them more vulnerable.

- “CHILDREN AT PLAY” signs give parents a feeling of security in letting their children play in the roads. In fact, no level of signage could ever protect a child should they be hit by a car.

- Studies have shown that “CHILDREN AT PLAY” signs do not reduce traffic speeds or make drivers more observant.

Additionally, nearly 30 percent of tort cases filed against roadway agencies pertain to signs. When you install signs not in conformance with the MUTCD, you are increasing your agency’s liability should a child be hit on your roadways.

There are some alternatives that can work in many instances. The playground sign is an appropriate sign alongside parks where children may often visit. Also the pedestrian crossing sign should be used in those locations where children and others frequently cross the road to warn motorists.

It isn’t always easy to say no to residents of your community, but by not erecting “CHILDREN AT PLAY” signs, you may actually be making the community safer for everyone.

(Prepared by Andrew Morgan, WV LTAP for “County Roads & City Streets”, Fall & Winter 2010)

# Alabama Transportation Conference Presentations

The Alabama T2 Center is one of the sponsors of the Annual Transportation Conference. The 54th Conference was held in Montgomery on February 22-23, 2011. At the conference there were 37 technical presentations covering all aspects of transportation. Speakers were given the opportunity to provide us an electronic copy of their presentation for distribution. As a result, 31 presentations are now available on the Alabama T2 Center website >[www.alabamat2.org](http://www.alabamat2.org)< and can be accessed by clicking on "Transportation Conference". The presentation topics and authors are identified below.

## ADEM Update

Vernon H. "Chip" Crockett, Alabama Department of Environmental Management

## Advancements in Tack Coats

Scott Watson, Blacklidge Emulsions, Inc. Gulfport, MS

## Alabama School Bus Seat Belt Project

Dr. Jay Lindly, University of Alabama

## ALDOT Bicycle and Pedestrian Plan

Cathy Gerachis, Goodwyn, Mills and Cawood, Inc.

## ALDOT's Access Management Manual

Jim Meads, Sain Associates and Darrell Skipper, Skipper Consulting, Inc.

## Bicycle and Pedestrian Accommodation, the Federal Perspective

Dave Harris, FHWA

## Bridges Over Upper Bear Creek Reservoir for the Relocation of State Route 13

Adam Sandlin, ALDOT

## Clear Water Scour

Katie Lee, U.S. Geological Survey

## Cogongrass: The Battle on Our Doorstep

Stephen Enloe, Auburn University and Stephen Pecot, Larson & McGowin

## Development of a Ride Quality Smoothness Specification and Technology Evaluation Program

Dr. Buzz Powell, Auburn University

## Flood Frequency in Alabama

Scott Hedgecock, U.S. Geological Survey

## Identifying Critical Highway Connections Between Rural and Urban Alabama through Access-based Performance Measures

Dr. Jeffrey LaMondia, Auburn University

## Impact of the New AASHTO Guide Manual for Bridge Element Inspection

Eric Christie, ALDOT

(Continued on next page)

(Continued from page 6, Transportation Conference Presentations)

Implementing Full Depth Reclamation  
Henry Hawkins, Chambers County

Increased Safety for Complex Highway – Rail Crossings using Barrier Gates & Crash Cushions  
Andy Davis, Energy Absorption Systems, New York, NY

Introduction to the HSM  
Martin Bretherton, HNTB Corporation, Atlanta, GA

Lee County Master Plan  
Robert Ham, Lee County

Lightweight Aggregate and Internally Curing to Mitigate Bridge Deck Cracking  
Benjamin E. Byard, Auburn University

Micropiles for Bridge Bent Foundations  
Dr. J. Brian Anderson, Auburn University

Mitigation of Alkali-Silica Reaction in the Wetumpka Arch Bridge  
Dr. Anton Schindler, Auburn University

Multi-modal Impacts of ThyssenKrup Project  
Dr. Ulrich Albrecht-Freuh, ThyssenKrupp Stainless USA

Overview of the HSM and Alabama Implementation  
Dr. Steven Jones, University of Alabama

Performance Based Specifications  
Dr. Karthik Obla, National Ready Mixed Concrete Association, Silver Spring, MD

Proposed Bridges for I-20 Over the Coosa River  
Luther Boudra, MACTEC Engineering

RoadMAP – ALDOT's New Maintenance Management System  
George Conner, ALDOT

Self-Consolidating Concrete in ALDOT Bridge Girders  
Dr. Robert W. Barnes, Auburn University

Structural Performance of RAP and WMA at Test Track  
Dr. David Timm, Auburn University

The Poisoning of Toomer's Oaks  
Stephen Enloe and Gary Keever, Auburn University

Upgrade of Axially Loaded Pile-Soil Modeling with the Implementation of LRFD Design Procedure  
Dr. Mohammed Ashour, University of Alabama, Birmingham

U.S. Coast Guard Deepwater Horizon Incident Response Summary  
Rear Admiral Mary E. Landry, U.S. Coast Guard, New Orleans, LA

2009 MUTCD: Practitioners vs. FHWA  
Stacy N. Glass, ALDOT

# Highway Research Center Publications

The Highway Research Center is located in the Department of Civil Engineering within the Samuel Ginn College of Engineering. The HRC, directed by Anton K. Schindler, supports Alabama's highway industry through a coordinated research program with ALDOT, national partners, counties and contractors. The HRC conducts research in civil engineering subdisciplines required for highway design, construction, maintenance and operations.

The HRC's URL is <http://eng.auburn.edu/research/centers/hrc/index.html>. Sixty-one research reports dated from 1988 are now available on this website and can be downloaded. Included are recent research reports dated 2010 and 2011:

## **Cracking Tendency of Lightweight Concrete**

**B.E. Byard and A. K. Schindler, 2011**

## **Introduction to Mechanistic-Empirical (M-E) Design Short Course**

**D.H. Timm and R.E. Turochy, 2011**

## **Evaluation of Cracking of the US 331 Bridge Deck**

**A.K. Schindler, M.L. Hughes, R.W. Barnes and B.E. Byard, 2010**

## **Guidance for M-E Pavement Design Implementation**

**D.H. Timm, R.E. Turochy and K.P. Davis, 2010**

## **Performance of Self-Consolidating Concrete in Prestressed Girders**

**K.M. Boehm, R.W. Barnes and A. K. Schindler, 2010**

If you have an interest in one or more of the subdisciplines of civil engineering (construction, environmental, geotechnical, hydraulics and hydrology, pavements and materials, structures, and transportation), these research reports can be valuable additions to your library.



## PUBLICATIONS FROM AUBURN UNIVERSITY

The following publications are free upon request from the Auburn University T2 Library. Please call Kathryn Storey in the AU Civil Engineering Department at (334) 844-4320 or email her at [storeke@auburn.edu](mailto:storeke@auburn.edu)

### **291-1 Maintenance of Drainage Features for Safety**

FHWA, July 2009, 38 pp.

This guide for local street maintenance personnel describes how storm runoff affects roadway safety, how to recognize drainage problems, and how to correct unsafe drainage features.

### **291-2 Maintenance of Signs and Sign Supports**

FHWA, January, 2010, 58 pp.

This guide for local street maintenance personnel covers the topics of sign volume, sign materials, sign supports, sign installation and the elements of a sign management system.

### **291-3 Review of State Roundabout Programs, Mixed Priority Delay Models at Single Lane Roundabouts, Roundabouts in Signalized Corridors, and Multimodal Accessibility of Modern Roundabouts**

Transportation Research Records 2182 and 2183, Transportation Research Board, 2010, 44 pp.

These four articles address design and operational aspects of roundabouts, including delays, crosswalks, pedestrian designs, and signalization.

### **291-4 Optimum Urban Clear Zone Distance**

Christian R. Sax et al., Transportation Research Record 2195, Transportation Research Board, 2000, 9pp.

This Iowa study presents the effects of clear zones on safety performance of urban curbed streets. The results suggest that a 4 to 5 ft. clear zone could be effective in reducing 90% of urban fixed-object crashes.

### **291-5 Safety Evaluation of Offset Improvements for Left Turn Lanes**

Bhabwant Persaud, et al., Transportation Research Record 2171, Transportation Research Board, 2010, 8 pp.

Geometric, traffic and crash data were analyzed for 117 intersections in Nebraska, Florida and Wisconsin. Safety was evaluated for a variety of left turn lane offset improvements. Those improvements which resulted in significant crash reductions are identified.

### **291-6 Multimodal Driveway Design**

J. L. Gattis et al., Transportation Research Record 2198, Transportation Research Board, 2010, 8 pp.

The focus of this article is on access management issues and designing driveways to accommodate all modes, particularly pedestrians and bicycles. Design guidelines are presented.