

**MINUTES**  
**Task Force 13 Fall 2004 Meeting**  
**The Beckman Center**  
**Irvine, California, October 11 and 12**

Co-Chairman **Pat Collins** welcomed members to the National Academy's Beckman Center, and thanked Chuck Niessner and Adrienne Blackwell for making the arrangements for the Task Force. He recognized Chairman Emeritus **Art Dinitz**, who is being honored by ARTBA's Transportation Development Foundation as one of the Top 100 Private Sector Transportation Construction Professionals of the 20<sup>th</sup> Century. **Collins** also recognized various members of the AASHTO **Technical Committee on Roadside Safety** who were meeting with us in advance of their meeting Wednesday through Friday. **Jim McDonnell** of AASHTO Headquarters was also thanked for his assistance in helping the Task Force obtain \$75,000 in funding for the update to the Barrier Guide, and \$100,000 for the Bridge Rail guide.

**Collins** recommended that the Minutes of the Spring 2004 meeting, held in Washington, DC, be approved. **Durkos** so moved, and the motion was seconded and approved. **Nick Artimovich**, Task Force Secretary, then summarized the subcommittee activity as reported from that last meeting. Note that any member may request an electronic version (MSWord) of the minutes for any or all of the last seven Task Force 13 meetings by emailing [nick.artimovich@fhwa.dot.gov](mailto:nick.artimovich@fhwa.dot.gov) . Those meetings were: Washington, DC, Spring 2004; New Orleans, Fall 2003; College Station, Spring 2003; St. Louis, Fall 2002; Seattle, Spring 2002; Portsmouth, NH, Fall 2001; Sarasota, Spring 2001; and Jackson Hole, Fall 2000. These minutes will be posted on the TF-13 website in the future.

**Collins** got right into the business of the Task Force with the subcommittee meetings. He noted that most of the work is done by the subcommittees that now number 8, each having a co-chair from industry and the other from a state Department of Transportation (as does the Task Force, for that matter.) All members present participated in Subcommittee #1.

**Subcommittee # 1 – Publications**

**Nancy Berry** and **Matt Leahy** briefed us on the status of the Task Force 13 website ( go to <http://www.aashtoff13.org> ) They requested AASHTO advice on publishing on our website. Use of the AASHTO logo is not a problem. Links to the websites of private industry are OK as long as no AASHTO money is involved in the TF-13 site. Funding of the site with private industry money is likewise not a problem as long as it doesn't appear that AASHTO is endorsing proprietary products.

There has been a lot of activity at the Virginia DOT as they revised our web site from the excellent framework developed by **John La Turner**. They will continue to host the site for the near term, but the Texas Transportation Institute will eventually take over the site. There was discussion as to whether each subcommittee should post the benefits of their publications, or if that information that is common to all of the TF-13 guides should be pulled together and placed in an introductory page. Each subcommittee will provide the "benefits" to the publications committee and **Berry** and **Leahy** will decide the appropriate placement.

Some subcommittee content is already posted. The Rail – Highway Crossing Hardware committee has its “contact list” of highway and rail professions on line. See the link at <http://www.aashtotf13.org/Subcommittee-8-Rail-Crossing.asp> The Work Zone Hardware subcommittee supports the National Work Zone Safety Information Clearinghouse, linked at <http://www.aashtotf13.org/Subcommittee-6-Work-Zones.asp> Also, the 1995 edition of the Guide to Standardized Barrier Rail Hardware is available through <http://www.aashtotf13.org/Barrier-Hardware.asp> Minutes of this meeting and previous meetings, back to the late 20<sup>th</sup> Century, will also be posted.

**Malcom Ray** briefed us on his NCHRP 20-7 project to update the barrier guide. His first priority will be to establish a page format. This will be used by manufacturers, states, test houses and others to develop standard drawings for this and other TF-13 guides. The drawings will be posted in PDF (portable drawing format) and TF-13 will retain the source drawings ( .dgn, .dwg, .doc etc.) in the event that we have to make a change and the original author is unavailable.

**Dinitz** noted that he brought this up at the meeting of the Joint Committee / Subcommittee on New Highway Materials and Technologies. AASHTO is OK with what the Task Force is doing, and AGC and ARTBA are OK with what AASHTO goes along with.

**Berry** discussed what would be needed to maintain the site. TTI and VDOT would be willing to maintain it, but at a fee. In order to determine what the appropriate fee would be, we need to determine the size of all the documents that are to be posted on the web site. **Collins** agreed that we need to determine an overall plan for updating our documents.

**Artimovich** asked if the Task Force membership list ought to be posted. From the beginning of his tenure as TF Secretary, he was advised to keep the list on a “need to know” basis, lest it be used for unwanted commercial purposes. It was the sense of the members present that the list should be posted, but only in a password protected area.

## **BREAKOUT SESSIONS**

### **Subcommittee # 2 – Barrier Hardware** (Minutes courtesy of Bob Takach)

#### **I. Review of NCHRP 20-7(192) Task list:**

Will Longstreet reviewed the task list as outlined in NCHRP 20-7 (192). This project has allowed funds for an update of “A Guide to Standardized Highway Barrier Hardware”.

Task 1. Survey the state DOTs, FHWA and private industry to identify current barrier systems and components.

Task 2. Develop a standard format for the information collected in Task 1 and convert all system and component information to the standard format.

Task 3. Compile the most up to date barrier components and systems into the updated “A Guide to Standardized Highway Barrier Hardware, 1995”

Task 4. Post updated Guide to the Task Force 13 website.

Task 5. Establish an ongoing process for updating the publication.

At this point Will then introduced Dr. Malcolm Ray to the Barrier Subcommittee. Dr. Ray has been contracted for this NCHRP 20-7 (192) project.

## II. Dr. Ray Reviews Update Priorities:

Dr. Ray and the Barrier Subcommittee discussed in general all the tasks as outlined above. Dr Ray stressed mainly what he believed were priorities at this point of the project. His first priority was to compile the survey inquiries and submit them to respondents. Second priority was to finalize a drawing / specification sheet format for the Guide and establish the sheets physical layout. Dr. Ray also reviewed the process for the review of the data. Dr Ray suggested that he would take care of “editorial” comments and corrections. He also suggested that the Barrier Subcommittee and/or NCHRP panel will review and approve drawings and specifications to be in final Guide.

## III. General discussions of the Subcommittee

Some of the comments that were brought forth, but not necessarily resolved, during our discussion are as follows;

Nancy Berry wanted to know if Guide drawings / specifications would have “ownership” and contact information listed.

John Durkos suggested that Dr. Ray get as much help as possible from the Subcommittee members to get the most out of the funds allocated.

Dick Powers wants NCHRP Test Level listed for components, noting that strong post with steel blocks is still acceptable for TL-2 but not TL-3.

We discussed pros & cons of optional photos and whether to put them on the drawing page or link to a separate photo. Dick Powers voiced his opinion against having a photo on the drawing page. It was generally agreed that photo would not be on drawing page, but could be linked.

Heath Valentine strongly suggested the use of isometric drawings especially for the system drawings.

Jim McDonnell questioned the date information and revision information on drawing and “How do you know what is the latest drawing?”

The question was brought up “What are we going to do with the bridge railing and transition drawings that are now still part of the 1995 Barrier Guide?” Both Dick Albin and Dean Alberson suggested that those existing drawings be left in the Barrier Guide until they can be moved to a new Bridge Railing and transition Guide.

Dick Powers asked about the status of the survey Dr. Ray was compiling. Dr Ray hoped to have survey input by end of year. (2004)

Dean Alberson asked that NACE, National Association of County Engineers, not be left out of the survey.

English vs. Metric, it was finally decided to give English dimension first with its metric counterpart listed second in parenthesis.

Dr. Malcolm Ray closed our session by asking the group to continue to watch the website for progress of the graphical standard, updates, comments and other progress.

### **Subcommittee # 3 – Bridgerails and Transitions**

This subcommittee has received \$100,000 in 20-7 funds to continue the Bridgerail guidebook begun by the FHWA in California. They now need volunteers to form a project panel to develop a work plan, select a contractor and oversee the work. The basic format will be similar to the Barrier Guide with basic dimensions and a photograph. Additional details will be available via links.

### **Subcommittee # 4 – Drainage Products**

**Adam Neuwald** reported that his newly resurrected subcommittee has gained members, but could still use some state DOT participation. All DOT representatives in Task Force 13 were asked to inform their drainage / hydraulics engineers about Task Force 13 and its activities. The subcommittee also suggests that stormwater management products be added to the TF-13 guide.

### **Subcommittee # 5 – Sign and Luminaire Supports**

**Gregg Fredrick** discussed the key benefits of the various publications ought to be given to the Publications Committee for review to decide whether they should be listed for each subcommittee, or combined in an introductory page. Drawings in our publications will be PDF, with the source file archived. Users will be referred to the manufacturer if they need to download drawings. As the Sign and Luminaire guides are not to be application standards, a disclaimer should be included to direct users to the AASHTO Standard Specifications for Structural Supports for Signs, Luminaires, and Traffic Signals for information on foundations and loadings.

Wyoming DOT, the agency coordinating the pooled-fund study to revise the Luminaire Support Hardware guide, is looking for guidance on how and where to solicit proposals.

### **Subcommittee # 6 – Work Zones**

**Paul Fossier** noted that the National Work Zone Safety Information Clearinghouse (<http://wzsafety.tamu.edu>), run by the Texas A&M University, has incorporated the comments provided by the Task Force. At our Spring 2002 meeting in Seattle, Dr. Gerard Ullman explained the site to the Task Force and it was clear that a separate publication by TF-13 would duplicate work on the NWZSIC site. Dr. Ullman was receptive to our participation in improving his site and TF-13 members subsequently provided numerous comments to improve the usability of the site from our perspective. AASHTO and ARTBA provide for consistent funding for this site, but Dr. Ullman noted that additional funding was desirable for a major update that he would like to make.

In 2003 ATSSA proposed a voluntary system for labeling devices that met NCHRP Report 350 criteria. FHWA will post this on our web site, but TF-13 recommended that the Test Level be included in the suggested label format. FHWA concurs in this.

The labeling and usage of Water Filled Barriers and water filled Longitudinal Channelizing Barricades (LCBs) needs further discussion. For some of these plastic devices it is not apparent

which are designed to redirect an impacting vehicle, and which allow controlled penetration. This may properly be the function of ATSSA training courses.

### **Subcommittee # 7 – Certification of Crash Test Facilities** (notes courtesy of **Ron Faller**)

The meeting began with a brief review of the mission statement and goals for Subcommittee No. 7, especially the desire to improve the consistency, competency, and accuracy of laboratory test results as well as for laboratory results to be globally accepted in the future. Next, a brief summary was given on the subcommittees' past activities, including the surveys on six topics related to crash testing activities and the interlaboratory comparisons (ILC's) related to high-speed film/video analysis and occupant risk determination using NCHRP Report No. 350 procedures. To date, two ILC's have been performed on high-speed film film/video analysis and six ILC's have been performed on occupant risk determination using accelerometer data. The results of these comparisons are provided on the Midwest Roadside Safety Facility (MwRSF) server. A link to this server location has been provided previously.

A seventh ILC is currently underway which includes data analysis using accelerometer and rate transducer results and an occupant risk determination using the standard OIV, ORD, PHD, THIV, and ASI measures. Results for this ILC should be compiled by the end of October 2004 and made available for review on the MwRSF server.

In the future, Subcommittee No. 7 will continue to promote dialogue between the crash testing laboratories as well as continue to conduct and operate ILC's on the occupant risk measures and high-speed film/video analysis. In the future, Mr. Lance Bullard of the Texas Transportation Institute (TTI) has agreed to conduct a film/video analysis ILC after an appropriate crash test becomes available for use. Also, Mr. Jeff Shewmaker of Safe Technologies, Inc. has agreed to conduct a future ILC on occupant risk determination using all five measures after the current ILC is completed.

Previously, there has been limited dialogue on the standardization and content of crash test reports. In order to improve consistency between laboratories, it was agreed that further collaboration and dialogue should be devoted to improving overall report content from all laboratories. At this time, the update to NCHRP Report No. 350 is nearing completion. Therefore, there exists an opportunity for this subcommittee to offer, as a group, recommendations for the minimum contents for test reports. As such, three test laboratories [MwRSF, TTI, and the Transportation Research Center (TRC)] have agreed to supply crash test reports for review by all of the test laboratories and FHWA. Once those comments are received, a recommended report checklist will be prepared and provided to the researchers charged with the 350 update as well as to FHWA. In addition, those report recommendations will also be compared to those guidelines already provided in NCHRP Report No. 350 as well as in the European test standard, CEN 1317. The Subcommittee Co-Chairs, Faller and LaTurner, have agreed to provide a preliminary listing of recommended report contents in checklist form to the laboratories prior to the starting the report review. Finally, it was also discussed whether system details within test reports could be prepared in the format that is consistent with the details desired in the revise and/or new hardware guides for guardrails, guardrail terminals, bridge railings, transitions, etc.

The subcommittee members agreed that it was time to begin dialogue and ILC's on a seventh topic related to crash testing or on "uncertainty in measurement." John LaTurner provided a brief presentation on this topic as related to his experiences at E-Tech Testing Services, Inc. in conducting these calculations and addressing those concerns with the third-party accrediting organization. A copy of his presentation will be included on the MwRSF server. As part of the ISO 17025 requirements, test laboratories will be required to report and discuss their uncertainties in measurement for critical measures and/or activities utilized in crash testing. For an upcoming ILC, it was agreed that each participating laboratory will begin to investigate their uncertainty in measurement before the next AASHTO meeting. More specifically, each lab has been asked to calculate their uncertainty in measurement with respect to speed determination and must be prepared to present and discuss those results at the Spring 2005 AASHTO meeting in Columbus, Ohio, on April 28-29, 2005.

John LaTurner recommended that the U.S. crash testing laboratories consider using the A2LA accreditation body for several reasons: <http://www.a2la.org>

(1) They are non profit and relatively inexpensive. <http://www.a2la.org/Applications/5-Application%20Part%205.pdf>

(2) They have a mutual recognition agreement with the EU accreditation bodies. <http://www.a2la.org/recognition/cooplabs.cfm>

(3) Their assessors have become more experienced with regard to crash test methods used at both Safe Technologies, Inc. and E-TECH Testing Services, Inc. In addition, if more U.S. testing laboratories use A2LA, there exists a greater opportunity to improve consistency during future audits which should lead to more consistency between laboratories.

Finally, Harry Taylor of FHWA, Washington, D.C., updated the group with regard to the status of the laboratory accreditation requirements. Harry stated that the draft FHWA document should be completed by the Spring 2005 AASHTO meeting and then made available for review and comment using procedures to be later determined by FHWA. It was also stated that for laboratory test results to have mutual recognition here in the U.S., those laboratories must participate in the ILC's currently being conducted as part of the Subcommittee No. 7 activities.

### **Subcommittee # 8 – Rail Highway Crossing Hardware**

**Dean Alberson** reported that the RXR Contacts List has been posted to the website, and is now available for use. The subcommittee is still seeking additional input from the FRA and the railroads.

### **REPORTS FROM SPECIAL SUBCOMMITTEES**

**New Standardization: Neuwald**, representing the National Precast Concrete Association, asked if there was a need to standardize concrete items such as modular bridge components, mechanically stabilized earth fascia panels, noise wall components, rail highway crossing slabs, etc. ANY TASK FORCE 13 MEMBER READING THIS SHOULD CONTACT NEUWALD IF THEY SUPPORT THIS EFFORT.

## AASHTO

**Jim McDonnel** (oftentimes erroneously spelled “McDonald”) handed out a paper “Guidelines for Allocating Research Funds” that subcommittees might use to focus their requests for funding. He also noted that AASHTO policy on Metric/English units had not formally been discussed recently, and that TF-13 should draw up a recommendation for the Standing Committee on Highways to consider. Informally, dual units are the policy, but whether English or SI units come first is not stated.

## FHWA ISSUES

**Dick Powers** addressed three items of interest to Task Force members.

- 1) Harry Taylor is working on the FHWA position on proprietary items. It will be ready for the Spring 2005 meeting.
- 2) The warrants for median barriers will change due to the increase in crashes observed nationwide, and the completion of the NCHRP study which noted that the present 30 foot median width is inadequate. Many vehicles are leaving the pavement on the left side of the roadway and crossing medians that are 40, 50, or 60 feet wide.
- 3) FHWA has drafted a paper on selecting W-beam guardrail terminals. Designers will be advised to assure that all W-beam terminals are situated to provide an adequate recovery area behind the terminal. Adequate grading in advance of the terminal, adjacent to it, and through the runout area behind the terminal are emphasized to achieve optimum terminal performance.

## EXECUTIVE BOARD MEETING

After Monday’s adjournment, the Executive Board, consisting of the co-chairs of the Task Force and of all the subcommittees, the secretary, the chairman emeritus, and AASHTO Liaison, met. We gathered around the sand pit outside the Hyatt Newporter, enjoying the cool breezes (see, you really ought to attend more of these Task Force 13 meetings!) In attendance were **Collins, Durkos (rather late, I might add), Artimovich, Dinitz, Alberson, Berry, Leahy, Mauer, Bligh, Frederick, Longstreet, Bob Takach, Neuwald, Ayton, Cota, Faller, Albin, La Turner, Mauer, and Fossier.**

The meeting sites for 2005 were discussed. The spring meeting will be in Columbus, Ohio. **Durkos** has been the primary contact on that venue, and the dates are set for April 28 and 29. The facilities of Battelle Labs and the Transportation Research Center will be used. In the Fall we will again meet with the AASHTO Technical Committee on Roadside Safety. They are planning to meet in coastal Alabama. Gulf Shores will be the site if it remains after hurricane season. Otherwise we will likely meet in Mobile.

**Artimovich** again asked if the subcommittee pairings in the breakout sessions that we have been following for the last few years were satisfactory. Although there were no complaints about the current scheduling, all thought it was a good idea to shuffle them a bit just to allow attendees to participate in subcommittees that they had missed in the past. The current three breakout sessions are arranged like this:

Session B: #2 Barrier Hardware meets opposite #5 Sign and Luminaire Support Hardware  
Session C: # 3 Bridge Railings meets opposite #6 Work Zone Hardware  
Session D: # 7 Certification of Test Facilities meets opposite #8 Rail Highway Crossings and # 4 Drainage Hardware.

The proposed pairings for 2005 are as follows:

Session B: #2 Barrier Hardware - # 8 Rail Highway Crossings  
Session C: #3 Bridge Railings - # 4 Drainage - #5 Sign and Luminaire Supports  
Session D: #7 Certification of Test Facilities - #6 Work Zone Hardware

This reorganization will also cause conflict with some participant's preferences – if you have strong preference for one or the other, please let me, your TF-13 Secretary, know at [nick.artimovich@fhwa.dot.gov](mailto:nick.artimovich@fhwa.dot.gov)

Other topics briefly discussed:

How should names/contact info be updated on the web sites? This does not require the full attention of the various subcommittees. One person on each, or perhaps one person on the Publications Subcommittee should be selected to do this routine maintenance.

All **co-chairs** should send their subcommittees' "benefits" statements to **Berry** for review by her and **Leahy**.

The Task Force will send a recommendation to AASHTO that our publications show English units first, with SI units in parentheses.

A general disclaimer should be on the website indicating the general nature of our publications.

What else is needed for the website? We generally agreed that it looks good, but a password protected area is needed to control access to work in progress, membership addresses / emails, etc. **Berry** will check with her web people at VDOT to see what is possible.

Many members requested a list of attendees. Here is the registration roster:

<b>Name</b>	<b>Affiliation</b>
Albersen, Dean C.	Texas Transportation Institute
Albin, Richard	Washington State DOT
Amick, Ray C.	South Carolina DOT
Anderson, Jim T.	Designovations, Inc.
Artar, Andrew	Gregory Highway Products
Artimovich, Nicholas	Federal Highway Administration
Ayton, Mark C.	Ontario Ministry of Transportation
Bailey, Craig	Road Systems, Inc
Barratt, Stephen D.	CYRO Industries



Bennett, Donald C.	Bennett Bolt
Berry, Nancy E.	Virginia DOT
Bligh, Roger P.	Texas Transportation Institute
Boozer, John F.	Shakespeare Composite Structures
Boyce, Drew	Delaware DOT
Buchan, James B.	Georgia DOT
Bullard, Delbert, L	Texas Transportation Institute
Butler, Richard R.	BRIFEN USA
Christensen, Mack O.	Utah DOT
Clocksinn, Bernie L.	South Dakota DOT
Collins, B. Patrick	Wyoming Dept.of Transportation
Cota, Keith A.	New Hampshire DOT
Denman, Owen S.	Barrier Systems, Inc.
Dinitz, Arthur M.	Transpo Industries, Inc.
Dunlap Michael, L.	Karco Engineering, LLC
Durkos, John C.	Road Systems, Inc
Faller, Ronald K.	Midwest Roadside Safety Facility
Feldberg, Michael	Valmont Industries
Fossier, Paul B.	Louisiana DOT
Foster, Rick	ABT
Fredrick, Gregg C.	Wyoming DOT
Gauthier, Gary P.	CALTRANS
Grover, Jeffrey L.	Gregory Highway Products
Heimbecker, Chad G.	Bryson Products
Ivory, Matthew A.	Karco Engineering, LLC
Johnson, Don	Trinity Industries
Jones, Joseph G.	Missouri DOT
Julian, Frank C.	FHWA Georgia Division
Kennedy, James C.	Battelle Memorial Institute
Koller, Timothy J.	Neenah Foundry Co.
Kothmann, Kaddo	Road Systems, Inc
Lacy, Rod P.	Kansas DOT
Lake, Arthur	Lake Traffic Solutions
LaTurner, John F.	E-Tech Testing Services
Leahy, Matt	Xcessories Squared
Longstreet, William P.	Pennsylvania DOT
Macchietto, Carl J.	Valmont Industries, Inc.
Mackey, Gary	Ameron International - Pole Products
Mauer, Frederick	Marion Steel / SAFERoads LLC
McDonnell, James T.	AASHTO
McGinnis, Mark W.	Northwest Pipe Company
McGinnis, Richard G.	Bucknell University
Mickley, Andrew W.	Advanced Drainage Systems, Inc.
Minor, Ray C.	Hapco Aluminum Poles
Neuwald, Adam D.	National Precast Concrete Assoc.

Nevai, Martha	FHWA, California
Niessner, Charles W.	Transportation Research Board - TRB
Norton, Charles R.	Trinity Industries
Oskard, Morton S.	Advance Research Turner Fairbank
Pathak, Divyang P.	Pennsylvania Dept. of Transportation
Phillips, John W.	TRC, Inc.
Powers, Richard D.	FHWA
Ragan, Nelson	Guest of Nancy Berry
Ray, Malcolm H.	W.P.I.
Richardson, Frank D.	Karco Engineering, LLC
Shewmaker, Jeff P.	Safe Technologies, Inc.
Sicking, Dean L.	Midwest Roadside Safety Facility
Slagter, Robert D.	Anro Products, Inc.
Soneji, Jiten	Delaware DOT
Speer, Peter A.	Bunzl Takoma
Stock, Brian	EASI-Set Industries
Sylvester, Kevin, J.	Port Authority of NY & NJ
Takach, Robert	Trinity Industries
Taylor, Harry W.	FHWA
Valentine, Heath E.	Valentine & Company
Van Oudtshoorn, Norman	TUV Automotive, Germany
Williams, John	Gordon's Specialties, Inc (GSI)

Participants then carpooled to the Newport Beach Fashion Island to dine at the El Torito Grille.

**Tuesday, October 12**

**Durkos** opened our second day by expressing thanks again to **Niessner and Archer** for their coordination of the meeting, and to **Frederick** for his work on the registrations.

**UPDATE ON RELEVANT NCHRP PROJECTS**

**Chuck Niessner** did his usual excellent job in summarizing the current roadside related studies. Those of you viewing the electronic version of these minutes should be able to click on the project number below and be linked directly to the NCHRP page describing the project. Otherwise you may go to <http://www4.trb.org/trb/crp.nsf> and look for NCHRP.

<a href="#">16-04</a>	
Design Guidelines for Safe and Aesthetic Roadside Treatments in Urban Areas (Active)	
<a href="#">17-11</a>	
Determination of Safe/Cost Effective Roadside Slopes and Associated Clear Distances (Completed)	
<a href="#">17-14(02)</a>	
Improved Guidelines for Median Safety (Active)	
<a href="#">17-22</a>	
Identification of Vehicular Impact Conditions Associated with Serious Ran-Off-Road Crashes (Active)	

<a href="#">17-24</a>	
Use of Event Data Recorder (EDR) Technology for Roadside Crash Data Analysis (Active)	
20-7 (192)	
<a href="#">Task 192</a>	Update of <i>A Guide to Standardized Highway Barrier Rail Hardware</i> , 1995
<a href="#">22-12(02)</a>	
Guidelines for the Selection, Installation, and Maintenance of Highway-Safety Features (Completed)	
<a href="#">22-14(02)</a>	
Improved Procedures for Safety-Performance Evaluation of Roadside Features (Active)	
<a href="#">22-17</a>	
Recommended Guidelines for Curbs and Curb-Barrier Combinations (Completed)	
<a href="#">22-18</a>	
Crashworthy Work-Zone Traffic Control Devices (Crash Testing Done)	
<a href="#">22-19</a>	
Aesthetic Concrete Barrier and Bridge Rail Designs (Active)	
<a href="#">22-20</a>	
Development of AASHTO LRFD Design Methodology and Load Transfer Mechanism for MSE Walls with Top-Mounted Traffic Barrier / Anchor Slab Under Vehicular Impact Load (Work plan submitted)	

#### **AFFILIATED COMMITTEE ACTIVITIES**

**Neuwald** of the National Precast Concrete Association again solicited interest in a TF-13 subcommittee dealing with precast concrete items.

**Frederick** noted that the **AASHTO Subcommittee on Bridges** met on June 20-25 in Orlando, Florida. Technical committees of interest to TF-13 included T-7 on Guardrail and Bridgerail, T-12 on sign supports, and T-13 on culverts. Discussed were the FHWA Federal Lands bridge railing book, heights of bicycle railings (the chair of T-7 is REALLY getting tired of dealing with this and insists on retaining the 54 inch height in the AASHTO Bridge Specs.) and a school bus study that T-7 declined to participate in. The Technical Committee on Research voted to approve the Task Force 13 Bridge railing publication, and a vibration study on cantilever mast arms (other than fatigue at the welds.)

**Durkos** represented the **American Traffic Safety Services Association** and handed out brochures on ATSSA guardrail training. The next ATSSA Annual Meeting and Traffic Expo will be in Phoenix beginning February 27, 2005.

**McDonnel** representing the **American Association of State Highway and Transportation Officials** noted that he was late due to the zealousness of an “angel in blue” who gave him a warning for proceeding straight through an intersection from a “Right Turn Only” lane. AASHTO people should know better than to ignore traffic control devices.

AASHTO headquarters has been pretty much preoccupied with the highway bill reauthorization.

**McDonnel** suggested that Task Force 13 consider meeting with other similar SCOD meetings, such as the Standing Committee on Traffic Safety. He offered to coordinate where necessary. Context Sensitive Solutions is pushed by AASHTO but the CSS task force is dissolving as they

published their “companion document” A Guide for Achieving Flexibility in Highway Design. AASHTO needs a permanent “home” for CSS.

Regarding steel prices, new contracts may have escalation clauses, but no retroactive change to the federal funding of a project is allowed. States may use their own funds if they wish to grant relief to contractors.

**Durkos** thanked **McDonnell** and noted that Jim’s behind-the-scenes work led to funding of some of our publication revisions, and an increased enthusiasm on Task Force 13.

## **OLD BUSINESS AND NEW BUSINESS**

Our Spring 2005 meeting will be in Columbus, Ohio, April 28 & 29, hosted by Battelle, an FHWA Center of Excellence in Finite Element Modeling. On Friday we will travel to the Transportation Research Center to witness a crash test. As some of TRC’s test facilities are indoors, we have been promised a crash test rain or shine.

Our Fall 2005 meeting will again be in conjunction with the AASHTO TCRS in Mobile or Gulf Shores, Alabama. The TCRS has also selected the venue of its Fall 2006 meeting as Toronto, Ontario. Their members have checked their travel restrictions and there doesn’t seem to be a problem going north of the border. TF-13 is open to suggestions for the Spring 2006 meeting (yes Art, we know you want to go back to Jackson Hole.)

**Collins** had a few more final notes,

He will prepare a resolution to the Joint Committee that would recommend English Units first, followed by SI

We need to get “New Standardization Areas” underway again.

Don’t forget that our basic charge is to promote the standardization of hardware. Just by the TF-13 making the information available goes a long way towards accomplishing this goal.

## **TECHNICAL PRESENTATIONS**

**Dick Albin** showed us information on the design and testing of the Deception Pass Log Rail that is used on Whitney Island’s State Route 20 in a State Park in Puget Sound. The original park was built by the Civilian Conservation Corps, and the so-called guardrails consisted of stone masonry pillars “connected” with logs. Some of these barriers shield 150 foot high cliffs. There is obviously no redirective capability to this original system, as auto impacts would dislodge the logs and crumble the pillars. However the Park desired to replicate it as closely as possible for aesthetic purposes (after the DOT attempted to replace it with guardrail, which did not go over well.) Through discussion between the DOT and the park people, a design was developed that consisted of textured concrete pillars at 18-foot spacing and a continuous steel-backed log rail 12 inches in diameter that is offset from the face of the pillars. There was also an intermediate post consisting of a steel tube. This design successfully passed TL-2 crash testing.

**Owen Denman** of Barrier Systems Inc. showed various devices for use in work zones, including the California Balsi Barrier Trailer for very short term / moving work zones, the SafeGuardLink

steel moveable barrier, the Absorb350 terminal, a safety curb barrier, and roller-formed patterns on slip formed concrete safety shaped barriers.

**Jim Anderson and Gary Orsinger** described the Designovations “Snap N Safe” cast iron breakaway device designed for use with perforated square steel tube sign supports. The device is intended to permit a clean breakaway action at the base while reducing the time needed to replace the sign, as the square anchor base is not damaged in a crash. Task Force members questioned the static load capability of the device. Designovations did conduct load tests in-house but will look into the wind load and other requirements contained in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

**Faller** described three devices recently tested at the Midwest Roadside Safety Facility. 1) The Minnesota noise wall with a GluLam barrier shielding the vertical concrete pillars, 2) The CYRO Paraglass Soundstop Noisewall successfully tested to TL-4, and 3) the F Shape portable barriers by Florida and Kansas, pinned to asphalt surfaces.

**Mauer** of Marion Steel showed the US High Tension Cable Barrier consisting of three cables tensioned to 5600 pounds. With a 2 meter post spacing using concrete sockets, this barrier deflected 5 feet 11 inches upon impact with the pickup. With 5m post spacing, the deflection increased to 9 feet 8 inches.

**Bligh** of the Texas Transportation Institute showed crash testing of the following systems:

X-Bolt connection for CMB. Segments were 10 ft long in the F Shape and were tested at TL-3. The deflection distance was 24 to 27 inches.

Tripod Portable Sign Supports of 1 ¾ PSST legs and a 12 ga PSST tubes support.

Dual Leg PSST sign stand on skids.

## **SPECIAL PRESENTATION**

**Dinitz** spoke of the AASHTO/AGC/ARTBA Joint Committee and how TF-13 fits into it and the Subcommittee on New Materials and Technologies. He noted that these task forces are instrumental in introducing new materials to other users. This was the same PowerPoint presentation that your secretary made available via email a couple of months ago.

## **JOINT MEETING WITH AASHTO TECHNICAL COMMITTEE ON ROADSIDE SAFETY**

### Topic 1

The first topic of joint interest was median barrier warrants. **Powers** of FHWA summarized the NCHRP Project 17-14(2) which was supposed to come up with new guidelines. In anticipation of the results of this study, FHWA asked each state to examine their cross-median crashes and plot them against the warrant chart in the Roadside Design Guide. The level of detail received from various states so far varies significantly, but from a number of good sources it is obvious

that many severe crashes are occurring on medians that are between 30 and 100 feet wide or more, with a sharp drop-off in data at about 70 feet for most states.

After Dick's presentation, a representative from each AASHTO DOT represented outlined their current median barrier policy.

**New Hampshire – Keith Cota** A study years ago in conjunction with the design of NH 101 showed that a 90 foot median was optimum, but environmentally unpopular. Current policy allows medians 60 foot and wider to go without barriers. Narrower should be evaluated. NH prefers three beam, but on lower volume highways use dual W-beam. Urban routes use 6x8 box beam median barrier.

**California – Gary Gauthier** Dick's presentation showed Caltrans policies, which require evaluation of median barrier when the width is less than 75 feet. From zero to 30 feet CMB is recommended, and from 20-75 feet Three Beam can be considered. The use of CMB for narrow medians is based on the former FHWA policy that flexible barriers should be used when the distance from the edge of the traveled way exceeds 15 feet. Caltrans' roadside policy emphasizes low maintenance and aesthetics. They are pursuing an aesthetic bridge rail, a portable CMS, an aesthetic steel guardrail, and a self-restoring crash cushion.

**Louisiana – Kent Isreal** Barriers are not used on medians 60 feet or wider. Concrete barriers are used on narrower medians, but again that old "max 15 foot offset" is followed and paired concrete safety shaped barriers are used when the median width exceeds 30 feet +

**Wyoming – Pat Collins** Crossover crashes are more prevalent across medians that are 40 feet wide or less. New construction is tending towards providing 76 foot medians to accommodate turning vehicles. When barriers are used, cable systems are preferred to prevent snow drifting.

**South Carolina – Ray Amick** Cable barriers are installed on medians less than 72 feet wide.

**Kansas – Rod Lacy** Still follow the guidance in the RDG. Most urban areas have filled in medians with CMB. Out west there are 60 foot wide depressed medians with no barriers. Some new four lane highways are being built with 60 and 70 foot wide medians. Kansas believes that warrants should not include references to cost-effectiveness.

**Delaware – Drew Boyce** The new construction on US 13 has a 66 foot wide median. On the I-495 widening project double sided w-beam was installed, and the I-95 widening project will likely also have a barrier added.

**Virginia – Nancy Berry** No barriers are in place on the 30 and 40 foot medians on I-81, but recent crashes have led them to install dual-face w-beam. This has been used with the w-beam at different elevations on the front and back with good success.

**Pennsylvania – Jim Tenaglia** Pennsylvania follows the RDG. They are studying cross median crashes but have not established criteria. They did notice some concentration of crashes in the vicinity of interchanges, possibly due to weaving maneuvers.

**Missouri – Joe Jones** Money from the Blood Alcohol program has been funneled into median projects. Medians of 40 feet or less get cable – between 40 and 60 feet are analyzed – over 60 feet do not get barrier. The low tension barrier is a nightmare for maintenance.

**South Dakota – Bernie Clocksin** Follows the RDG. They look at the crash history on a project by project basis and typically use CMB when barrier is warranted.

**Utah – Mac Christensen** Barrier is used on all urban Interstate medians, typically using CMB or high-tension cable. Rural medians that are 40 to 50 feet wide do not get barrier.

**Iowa – Dave Little** Follows the RDG but hopeful for new information from the NCHRP study. They have many 60 foot and narrower medians. Installed a Brifen barrier last December and are very satisfied. In the Waterloo area they have a highway with a 20 foot wide raised median with signalized intersections every mile. They are looking to remove the raised median and place a barrier due to multiple fatal crashes.

**Alabama – Steve Walker** New medians are being built at 64 feet with no barrier. They have identified 8 sites around the state with 54 foot wide medians that they will add barrier to. In other places they use 30 inch high w-beam with rubrail located 8 feet from the traveled way.

**Ontario – Mark Ayton** No barriers are used on medians 50 feet or wider. New rural freeway construction will have 100 foot wide medians. Freeways with 6 or more lanes will have median barriers.

**Georgia – Ben Buchan** Any closed medians, or medians 40 foot wide or less, get barriers. Those 64 feet or wider usually not. Cable is being installed on a case-by-case basis.

**Ohio – Rick Mauer** Median barriers are being installed due to recent notable fatal crashes. The DOT didn't want to get into a project of this scope since it would mean barriers everywhere. Now they are looking at 500 miles of cable median barrier. **Heath Valentine** added that 40 to 90 foot medians had numerous fatalities, and that certain Districts are champions of the Brifen system with 150 hits and no penetrations.

## Topic 2

### **NCHRP REPORT 350 UPDATE**

**Dean Sicking**, the PI for this project, reported on his findings, and the direction of the project panel to date. The summary below does not go into any great detail as much has been studied that will be published in Sicking's report.

The major areas investigated were:

Test vehicles  
Impact conditions

Deformation/intrusion  
Occupant risk  
Soil specifications  
Critical impact points  
Test specifications  
Reporting requirements

VERY BRIEF highlights are:

Small Car: projected to go from 820 kg to 1100 kg

Heavy passenger vehicle: projected to go from 4400 pound two door pickup to 5000 pound extended cab pickup

Impact conditions: no changes in speed projected; all test angles recommended to be 25 degrees

Deformation: current ad-hoc 6 inch limit projected to be 9 to 12 inches depending on location

Occupant risk: calculations will not be OIV and Ridedown, rather will follow European THIV and PHD practice.

Soil specs: where soil condition is critical, soil will be tested in situ.

Testing to date shows that the current strong post W-beam failed with the 5000 pound two door pickup. Although the 5000 # four door pickup is obviously heavier, it is a better built vehicle for crash testing purposes – it will stress the hardware to a greater degree, but may not behave as badly as the 2000 P. **Sicking** estimates there is a 2 to 1 likelihood that the 5000# pickup will fail the strong post W-beam test. (And not only did the Red Sox win the World Series, the New England Patriots won the Superbowl!)

Topic 3

## **IMPLEMENTATION OF NEW TEST STANDARDS**

The NCHRP report that Dean Sicking will write will be a research guide, but TRB does not want that document to become a de facto standard as did Report 350 when FHWA adopted it through the Federal Register process. Son of 350 will be voted on and published by AASHTO as a guide, and will be used for the evaluation of new hardware. Current thinking is that there will be no requirement to implement “Son of 350” hardware. Hardware that meets today’s Report 350 criteria will remain fully valid. The new criteria will only apply to new hardware that must be subject to new crash testing. It is not yet clear what this will mean for crash testing of modifications that are done to Report 350 hardware.

Thank you for reading this far. Please send any comments, questions, or corrections to me at [nick.artimovich@fhwa.dot.gov](mailto:nick.artimovich@fhwa.dot.gov) . See you in Ohio!