

Minutes of the Task Force 13 Meeting in Jackson Hole, Wyoming September 18 and 19, 2000

Monday, September 18 - Opening Session

Chairman Art Dinitz opened the meeting at 8:30 a.m. welcoming members to the Fall meeting of Task Force 13. **Dinitz** indicated that Jackson Hole was the site of the first TF13 meeting he attended some years ago, and that he was pleased to see so many old friends and new faces. The large attendance was appreciated as there is much work ahead of the Task Force. A big topic of discussion will be how we can get information on new standards and new technologies out to the marketplace.

After a round of introductions, **Dinitz** called for acceptance of the minutes of the Spring meeting in Savannah, Georgia. The motion was moved, seconded, and passed.

Dinitz then asked for a moment of silence in memory of a good friend and colleague, **Mike Essex**, who passed away this summer. Essex was remembered as a strong advocate of the forgiving roadside concept.

Task Force Secretary **Nick Artimovich** then summarized the activity of the subcommittees that met last spring and, as in the case of one subcommittee, in the summer.

Subcommittee Meetings

Dinitz reiterated that all present are members of Task Force 13 and that participation of everyone is needed. The subcommittee structure that resulted from the reorganization effort a couple of years ago has worked well. The emphasis of the Task Force now is to get our publications on electronic media and to have them updated every 6 to 12 months. A web site from which we could solicit improvements from users would be very useful.

The **Publications Subcommittee** met as a committee of the whole with the entire TF. **Ken Payne** of the Virginia Department of Transportation gave a presentation on the status of the AASHTO project to get their publications on-line. The TF13 letter to AASHTO on this subject has still not been answered, but it is clear that our requirements are of low status in the AASHTO scheme as our publications do not generate much revenue. **Dinitz** has requested that at AASHTO/ARTBA/AGC Task Force on electronic publications be established.

AASHTO's project has become NCHRP 20-7 / Task 131 to develop a plan for web applications. The model web site will first be used by the Materials Subcommittee as it generates a significant amount of money. (TF13 publications only generated an average of \$7100 per year from 1996 to date.) At January's TRB meeting there will be a training session on the software. TF13 may wish to get permission to go outside this process for our web site as we do not generate enough revenue to be a significant concern. Subcommittees are reminded to coordinate the format that their publications are formatted in to make compilation easier.

Another impediment to timely changes is the AASHTO ballot process for approving publications. A shortcut has been implemented that will allow technical changes (not policy issues) to be approved by AASHTO with fewer review levels.

Members may get a copy of the Subcommittee's PowerPoint presentation from Secretary Artimovich via email.

The AASHTO effort will progress when funded. At present, AASHTO is spending its resources helping states organize research projects in light of the reduction in FHWA Research dollars and the shift of that money to the states.

Discussion ensued on how TF13 should approach publishing its documents and maintaining feedback from users. **Larry Leahy** asked if anyone considered that our publication would become more popular in the light of the implementation of new hardware under Report 350? The corollary question is "what is the minimum sales volume that would generate interest from AASHTO in our publications?" The questions were also raised "have we not marketed our publications well? Can funding for publication and maintenance be included in the contract to prepare the publication? Can industry donations be used to fund publication?"

Dinitz noted that whatever methods or sources of funding we investigate, we must consider AASHTO's approval. Our publications would have much less use if they did not have AASHTO's "seal of approval" on them. He also asked for suggestions as to how we might generate funding and still live within AASHTO's rules. It is clear that we will not get high enough on AASHTO's list for them to add our publications to their web site for some time, so in order to continue in the business of providing up-to-date publications we must seek another avenue.

One suggestion was to use pooled-funds from a number of states. While that is a viable option, the states are already besieged with requests for same. When pursuing outside funding, as in taking contributions from industry in exchange for a listing on the web site, it must be noted that TF13 is a non-profit organization that has never collected money except for the semi-annual meetings. To start a fund-raising effort would require our following strict accounting procedures. Another suggestion was to approach APWA as their members and their consultants make frequent use of our publications. It was again noted that AASHTO will not likely approve of the use of their logo unless intimately involved with the project. The Task Force for Roadside Safety may be able to approach AASHTO on our behalf.

A number of options were discussed, many of which are listed in the minutes of the Executive Committee Meeting which was held at the end of the day. **Dinitz** charged each subcommittee to delve into the question of funding as part of their deliberations.

The TaskForce then broke into subcommittees. The minutes of these meetings, as provided by the subcommittee chairs, are attached to this document.

At 3:45 pm the subcommittee Chairs reported back on the activities of their groups. The minutes of subcommittees 2, 3, 5, 6, and 8 as submitted to the Secretary are attached to these minutes.

Finally, the Special Subcommittees of Marketing and New Standardization reported. The Marketing Subcommittee was acknowledged as having generated a significant attendance by state DOT personnel, and they pledged to continue their activities. No new areas of standardization were proposed for discussion. The meeting adjourned at 4:30 pm.

The meeting of the Task Force 13 Executive Committee was held at 4:30 pm. In attendance were **Dinitz, Pat Collins** (ViceChair), **Artimovich, Ron Faller, Joe Yodock, John Durkos, Hossein Ghara, Mark Bloschock, Dick Albin, Dean Alberson, Barry Stevens, Mike Stenko, Andy Atar,** and **Dave Little** of the TFRS.

The dates and locations for Calendar Year 2001 meetings were decided:

Spring, April 26 & 27 in Sarasota, Florida

Fall, September 26th to 29th in conjunction with the TFRS in Portsmouth New Hampshire.

Note that the Fall dates have been revised and are now October 1 and 2 for TF-13.

After additional discussion, the following options were enumerated for pursuing TF publications:

1. Encourage AASHTO to address our needs sooner as the implementation of NCHRP Report 350 will create a new demand for our publications.
2. Encourage AASHTO to address our needs sooner as the updated publications will generate more revenue than they have in the past.
3. Repeat our request that AASHTO participate in our web site efforts.
Seek AASHTO approval that TF13 does the web site ourselves with:
4. money from states and private companies.
5. money from consultants.
6. money from sponsors of our website, with links to their sites.
7. money from password fees to use the website.
8. Put the electronic version on a website as a "Draft" without specific AASHTO advance approval. Access fees would be charged to users. When document is ready for publication, send it to AASHTO for printing. AASHTO logo would only be on final document. Will need AASHTO approval before placing any final document back on the internet.
9. Make the draft version available only to TF members.
10. Keep pestering AASHTO to help us

Tuesday, September 19 Joint Session with AASHTO Task Force on Roadside Safety

Artimovich briefly summarized the first day's activities.

Tim Hess of NCHRP outlined the various NCHRP Projects dealing with roadside safety. This information is available on the internet at <http://www4.nas.edu/trb/crp.nsf/NCHRP+projects> .

Affiliated Committee Activity Reports

Pat Collins reported on the meeting of the AASHTO Subcommittee on Bridges and Structure held in June. The final report of project NCHRP 11-38(2) Fatigue-Resistant Design of Cantilevered

Signal, Sign, and Light Supports, is due this Fall. Project 17-10(2), "Structural Supports for Highway Signs, Luminaires, and Traffic Signals," is addressing concerns about new wind load charts and the design of spread footings. It is due to be completed next May. Technical Committee T-12 for Sign, Luminaire, and Traffic Signal Supports urged all State Bridge Engineers that they should work with the fabricators who supply hardware in their states and the consultants who design for them to make sure they are up-to-speed on the new specifications. Technical Committee T-7 for Bridge Railing are dealing with what are perceived to be oversized deck edges to accommodate the LRFD provisions for distributing railing impact loads.

Vic Leibi briefed us on coordination with ATSSA. Training is ATSSA's #1 priority and they have 6 active courses. They also have a standing committee on guardrail and encouraged TF member participation on that committee. The next ATSSA meeting will be February 17-20, 2001, in Fort Lauderdale, Florida.

Dick Albin gave a summary of the TRB Committee A2A04 that met in August in Wood's Hole, Massachusetts. Major topics covered were narrow medians, side impact testing, value engineering, laboratory accreditation, soil conditions, and in-service performance evaluations.

Dick Powers gave an overview of the FHWA reorganization and its effect on roadside safety. During the 1980's and 90's, roadside safety design was under the Office of Engineering. In 1999 Powers and Artimovich were transferred to the Office of Highway Safety Infrastructure in the Office of Motor Carrier and Highway Safety. After MCS was separated from FHWA as a separate agency, the highway functions remained with FHWA as the Office of Safety. The safety function was ultimately upgraded to the FHWA Safety Core Business Unit. Within the Safety CBU are two divisions. Rudy Umbs handles the Office of Safety Design which includes Roadside Safety and Railroad Crossings, and Janet Coleman handles the Office of Safety Operations which deals with speed reduction, pedestrian safety, work zones, etc.

Dinitz reported on the annual AASHTO/ARTBA/AGC Joint Committee meeting. The focus will be on moving from materials to new technologies. Indeed, the new name is "Joint Committee for New Materials and Technologies." Task Force 13 was noted to be a rare TF in that it has a continuing mission to promote standardization. Dinitz also noted that he wanted the TF to make an effort to reach out to consultants as they do much of the work for some states and most local jurisdictions.

TECHNICAL PRESENTATIONS

There were fifteen technical presentations made, perhaps a new record for TF13:

Len Meczowski showed a video from the National Crash Analysis Center on finite element modeling and how it could be used to reduce the number of developmental tests when designing a new type of roadside hardware. FHWA will also use FEM to develop standard hardware for portable concrete barrier segments.

Ron Faller showed clips of recent crash testing conducted at the Midwest Roadside Safety Facility, including Nebraska W-beam over curb (TL-3) which the 2000P penetrated. The same test using nested 12-gauge w-beam successfully contained the vehicle but with moderate vehicle climbing and vaulting. A Minnesota Type III barricade without, and with a sign, were tested with successful results.

Harry W. Taylor brought us up to date on efforts to develop a memorandum of understanding between the USA and the European Union. Unfortunately, the negotiations are stalled as the EU does not like our "Buy America" regulation, and we cannot budge on that issue. The EU wants to harmonize, once they have adopted their standards: Breakaway Hardware has been released from the technical committee. Barriers has been voted on.

Hossein Ghara gave a presentation on how difficult it is to apply new safety requirements to existing streets and highways. The 1994 FHWA memo mandating action on turn-down rails and unconnected bridge approaches is costing Louisiana many millions of dollars, but much work is yet to be done.

Barry Stevens showed us the new Impact Monitoring System which uses accelerometers mounted on crash cushions. When the cushion is struck, the excited accelerometer sends a cell phone signal to the company who, in turn, informs the owner, emergency services, etc.

John Durkos showed a new terminal for box beam railings which uses an impact head to separate the sides of the box, thus absorbing the energy of the crash. It has been tested to Report 350.

John LaTurner briefed us on tests of a number of devices tested at E-Tech: Idaho Concrete barrier; Caltrans K-rail; recycled rubber blockouts, EASI-Cell crash cushions, Quick Fix Sign Support System; Roadmarker Multipurpose Barriers; Safety-Stop TMAs.

Charlie McDevitt showed video of recent testing conducted at the FOIL: W-beam behind a 4 inch curb, a buried in backslope (with a 1:4 foreslope); the Connecticut W-beam median barrier terminal; the Pennsylvania w-beam transition to a vertical wall that can taper to a safety shape; and the Nebraska Thrie Beam Transition.

James Albritton reported on the Life Cycle Costs of the TRACC - Trinity Attenuating Crash Cushion, accounting for frequency of impacts and actual costs of repair.

Owen Denman reported on the Reactive Tension Barrier by Barrier Systems Inc., and the Absorb 350 water-filled terminal used with his company's concrete barriers.

Dick McGinnis gave a presentation on the Brifen Wire Rope Barrier. Now that the company has gone through some reorganization it intends to approach the US market. Two length-of-need tests have been conducted at MIRA and the terminal tests will be done at TTI in October.

Robert Blyth gave a presentation on Aluminum Overhead Sign Structures as used in Europe. These structures are lightweight and strong enough to span wide distances.

Dr. DeSantis reported on a new method of connecting mast arms to supports without using welds. A slip-fit design is used to affix them to the tapered poles.

Chuck Norton showed us the Dent Breakaway Bolt which has been tested and may be used with its own breakaway base design or may be used as a substitute for the bolts in a slip-base system.

Dave Hubbel gave a presentation on a new method of aiming lights on high mast supports that will reduce wasted light.

TASK FORCE 13 / TASK FORCE ON ROADSIDE SAFETY WORKSHOP

Dinitz opened the discussion by noting the three topics shown on the agenda: A Quantum Leap in Highway Safety, Implementation Efforts for New Technology, and Aesthetics vs Safety. The spirited discussions touched on these topics in various orders, but the notes below are an attempt to capture some of the highlights of each.

A Quantum Leap in Highway Safety

Dinitz noted that FHWA Administrator Wykle said we should work towards a 100-year highway system. If we are to build for the long term, then the optimum in safety ought to be provided. We must look at all we have done so far and see what can be done in the future with new technologies.

Mark Bloschock commented that a 100-year design is not possible because we do not know what will be using our roads and bridges in 100 years. Many sound bridges are replaced yearly because they are functionally obsolete - the traffic demand exceeds capacity. To accommodate this for a 100 year future is not practical.

Reese noted that R&D funding was slashed with the last highway bill. There will be no leaps in safety or anywhere else in highway design if this happens again.

Dinitz replied that he co-chairs an ARTBA committee that is working on the reauthorization of the highway bill. Maintaining the current percentages devoted to safety shouldn't be difficult. If we can come up with a proposal that would significantly improve safety, then we may be able to get funding increased instead of remaining static. For example, trees at hazardous locations should be removed. We need a SHRP-like program. SHRP brought European asphalt technology to the US and made a quantum leap in pavement technology. We could have a brainstorming session to help come up with innovative ways to treat or prevent run-of-road crashes.

Dick Powers noted that rumble strips are a very cost-effective way of reducing the number of vehicles running off the road.

John Dusel said that funding is the key to improving safety.

Utility poles are a common hazard that have not been universally addressed. We must convince utility companies that they need to act to reduce the hazard posed by these poles. The most hazardous locations should be addressed first. As a minimum we should find some way to strongly encourage that all utility poles be marked with retroreflective material to make them more visible at night. Laws may have to be enacted to give us any control over utility poles, including reflectorization .

Alberson noted that TTI has a contract to meet with utility companies to convince them that they have a responsibility to improve safety.

McGinnes noted that the Final Report of the Strategic Plan for Roadside Safety will be done in October. Improvements to the run-off-road situation will also deal with utility companies and young drivers as well. DeSantis asked if we could contact EPA and have them remove pressure treated wooden poles as a hazardous when disposed of.

Yodock noted that the Congress is upset over 68 Firestone tire failures, why can't we get that kind of interest for roadside hazards? Why can't we mandate rumble strips? Especially for utility poles that kill over 1500 people a year. The public should demand change. We should Bud Schuster for money to address utility poles.

Dinitz noted that in the Firestone issue it is a defective product causing death and injury to innocent drivers where utility poles don't harm anyone unless the driver is at least partially to blame. Everyone pays for utility service but you can choose too buy Firestone or not. We can identify warrants for bad poles that should be addressed first on a case-by-case basis. If we grant immunity to utilities for poles not identified as hazardous perhaps we can generate some interest.

Aesthetics vs Safety

Dave Little noted that there is a growing trend to add "gateway" treatments into towns. These have gone beyond plantings and have added structures, including some "signature bridges" which may include aesthetic railings. When you have to use galvanized thrie beam guardrail on the approach, some folks' aesthetic sensibilities are violated.

Dave Reese noted an instance in Kentucky where the MPOs and the historic preservation people insisted on expensive aesthetic treatments.

Bloschock commented that Texas has developed a number of aesthetic bridge rails and he would be glad to share these with other states.

Dave Hubbel noted that MWRSF tested a wood parapet that accepts designs cut into it and many communities are finding that attractive.

Durkos suggested TF13 invite consultants who design artistic / aesthetic treatments.

Dinitz noted the Merrit Parkway in Connecticut designed and tested their own aesthetic wood railing.

Floor: Many communities want "open" bridge railings so motorists can see the scenery off the bridge. Some note that it has been quite a struggle to develop a rail that accommodates all needs. The TTI Low Profile Barrier (TL-2) may be useful in separating vehicular traffic from pedestrians. It was undecided if a full strength rail was needed at the edge of the deck or if a pedestrian fence would be adequate.

Ghara said that aesthetic rails are generally needed on urban, low-speed environments.

Implementation of New Technologies (Comments have been gathered into four distinct areas of discussion - Crashes, Innovative Materials, ITS, and Implementation.)

New Technologies - Crashes:

John Dusel commented that we need a better accounting of accidents - a uniform accident report form is critical. Since all agencies have computers, the data should be entered and be

accessible in a common electronic format.

Little stated much info on crashes is anecdotal. What about a SHRP-level study to analyze crash data and find out where we should put our attention.

Meczkowski noted that with present systems it is impossible to determine the cause of crashes. Even on the FARS forms you need to read the narrative to understand just what happened.

Little told us of Iowa's Officer Information Management system that shows the police how to code a crash correctly.

Floor: Data from the automobile event recorders could be very valuable when researching the causes and effects of roadside crashes.

New Technologies - Innovative Materials

Meczkowski indicated that FHWA is looking into composite materials that could be put into safety hardware, but their cost is an issue.

Reese noted the HiDri blockout is available for use on guardrail.

Collins saw innovative pole designs at the Bridge Subcommittee meeting. If we all put on our thinking caps we should be able to develop some useful countermeasures.

Blyth noted that Canada has added an aluminum foam compound to guardrail to cushion the impacts.

New Technologies - ITS

Reese noted that the ITS community is telling us they have hardware that can keep cars on the roadway. We should look into that, too. Dinitz concurred and noted that a vehicle could have GPS that could help it stay on the roadway. We should establish a liaison with ITS.

Hubble suggested that the next ISTEA should have a provision to require innovative technologies on a certain highways and corridors. There are many potential solutions, but for engineers to be able to significantly improve safety with ITS we must form a closer partnership.

New Technologies - Implementation

Dinitz responded to a comment that drivers are responsible for their own actions that we are capable of making the environment more forgiving and we must look at the areas that we haven't dealt with before, perhaps using new technologies.

Floor comment: The problem is getting new technology accepted by the potential users.

Dinitz reminded us that HITECH was established to do this type of evaluation.

Yodock said that it would be a great improvement to reduce the friction on barrier walls.

Reese asked if NTPEP could accommodate roadside hardware testing (other than crash testing)

Dinitz said that NTPEP evaluates products on a national basis, but not necessarily on new products. Floor comment: All developers of proprietary products have faced the hurdle of getting their products accepted.

Dinitz commented that the states have liability and must be cautious. Those that participate in AASHTO committees are more open to new products. We should ask AASHTO to set up a process to review new products.

Little stated that states are looking at each other's experience more and more.

Reese noted that the various states have very different methods of dealing with new products. Some have well-established new product committees that make sure the correct people evaluate them.

Durkos said that some states have a performance specification that allows variability and innovation in product design, and new products move through the system better.

Reese has found that state maintenance engineers can be the biggest hurdle as they do not want to change the way they have been doing things.

Little replied that if you give the maintenance engineers a product that will save them time and keeps the cost in the same ballpark they will be most receptive.

DeSantis commented that maintenance engineers favor products that get their people out of traffic faster.

Dinitz suggested that more maintenance people ought to be invited to TF13, and Durkos followed with the suggestion that A2A04 meet with the TRB Maintenance Committee.

Bloschock said Texas has implementation funds to try using new, more expensive materials, to evaluate their performance.

Payne said that the states need someone to show them the new technologies, provide information, and let the states evaluate the products.

Dinitz began to wrap up the session by saying we all need to think deeper for innovation: better ways of doing things and using new materials.

Artimovich suggested that A2A04, TFRS, and TF13 might meet together with a facilitator to help us brainstorm and come up with new ideas.

Little stated that evaluation is important as there are bad products out there, and it is difficult to evaluate all of them.

AASHTO - ARTBA - AGC Subcommittee on New Highway Materials
Task Force 13 - Standardization of Details for Bridge and Road Hardware

Committee #2 on Barrier Hardware

Co-Chairs: Dick Albin (WSDOT) and John Durkos (Road Systems, Inc.)
September 18 & 19, 2000 - Meeting Minutes
Jackson Hole, WY

Previous Meetings

The Barrier Committee has now met 4 times as a breakout group. Those meetings were:

1. Sarasota, Florida - April 29, 1999
2. Park City, Utah - September 13, 1999
3. Savannah, Georgia - April 13, 2000
4. Jackson Hole, WY - September 18, 2000

Highlights of Previous Meetings

- Developed a mission statement for the Barrier Committee
- Identified tasks to accomplish this mission
- Developed a survey for "A Guide to Standardized Highway Barrier Hardware"
- Mailed the survey, evaluated results and identified needs
- Determined there was a definite need to update the current Guide
- Determined that continuous updates in the future are needed
- Determined that a dedicated agent is needed to complete the updates
- Identified innovative funding methods to be investigated
- Pursued action at a higher level within AASHTO to identify funding
- Created a draft resolution to the AASHTO-ARTBA-AGC Joint Committee
- We will now consider Barrier Guide to include photos of the assembled systems
- We will consider the existing web site maintained by Mac Ray (WPI) as a starting point (site located at <http://cee.wpi.edu/Roadsafe/HardwareGuide/hardware.html>)
- The above efforts will continue to be coordinated with other TF13 Committees

We must continue to recognize that the purpose of Task Force 13 of the AASHTO - ARTBA - AGC Joint Committee is to standardize highway hardware in order to provide transportation agencies, hardware manufacturers, consultants, contractors and developers with a consistent set of drawings and specifications as guides for the design and construction of these devices.

Meeting Summary (Jackson Hole, WY)

Approximately 42 people attended this September 18th breakout meeting. It was clear at this meeting that the "Who", "Where", "When" and "How" issues as they relate to updating "A Guide to Standardized Highway Barrier Hardware" (Barrier Guide) are not able to be resolved at this time. We therefore focused on the "Appearance", "Format" and "Content" issues at this time.

The 1999 letter that was written by Art Dinitz to AASHTO was never responded to and the proposed draft resolution has fallen on deaf ears. In addition, because of the fact that Task Force 13 generates only about \$7100 annual revenue for AASHTO (a little over 60% of that is from the Barrier Guide), our Guides are a very low priority for AASHTO. Therefore, we must look

outside of AASHTO to have the work done. A rough estimated cost to get the Barrier Guide updated is \$30,000 - \$50,000. Industry has offered to jumpstart the process.

The role of TF13 is to prioritize the revisions and develop/implement a plan. At the meeting, there were 40 copies of the Barrier Guide "table of contents" and "parts listings" handed out asking for prioritizing of system updates. We may need to send out periodic reminders to the committee to look through the "table of contents" to help determine some priorities. Once the Barrier Guide is completed, the goal is to present the finished product to AASHTO and hope they will endorse it.

Next Steps

- As a starting point, we will examine a Phase 1 approach to look at the most common systems (such as strong post W-beam) and develop a revised format. We will explore the format that was presented by Committee #3 on Bridge Railings and Transitions. Contents of that format include the assembly drawing, crash test data and a photo of the system. It is anticipated that the Barrier Guide will be available in paper, CD and Internet formats.
- As part of the Phase 1 approach noted above, it is desirable to have the manufacturers update their products in the format presented by Committee #3. This would significantly reduce the work to update the entire guide. If this could be done before the Spring meeting in April 2001 (Sarasota, Florida) we could compare them at that meeting. This would certainly take some prodding between now and next Spring.
- After the TF13 meeting, the Task Force on Roadside Safety (TFRS) discussed their relationship with TF13. While the TFRS supports the TF13, they do not have adequate funding to help update our guide. Dave Little did suggest that he would write a letter of support so that we can use it to help improve our standing with AASHTO publications. He and Pat Collins were going to work on this together.
- Art Dinitz will be discussing the industry funding approach with AASHTO to find out if there are any concerns with this proposed plan.

Purpose of the Guide

- It is a guide to promote standardization. It is not a design guide.
- Allow States to develop or revise their roadside safety standards
- Allow researchers to develop new products using standard components whenever possible
- Give industry drawings from which they can develop their fabrication details

Anticipated Revisions

- Establish a better index
- Include tabs to separate sections
- Create the new format to include photos of the assembled systems
- Include both US and metric dimensions
- Update to include NCHRP 350 approved systems developed since the 1995 publication
- Remove obsolete items
- Make revisions to known errors
- Identify and correct other errors

AASHTO - AGC - ARTBA Subcommittee on New Highway Materials

Task Force 13 - Standardization of Details for Bridge and Road Hardware

Committee on Bridge Railing and Transition Hardware

Co-Chairs: Ron Faller (MwRSF) and Mark Bloschock (Texas DOT)

Introduction

The Committee on Bridge Railing and Transition Hardware held its fourth breakout session discussion at the Task Force 13 Meeting in Jackson, Wyoming, on September 18-19, 2000. A list of members involved in this discussion are included on Attachment "A". Co-chairs and subcommittee members for this subcommittee have been charged with determining the goals, tasks, and assignments related to the preparation of future publications on bridge railings and transitions. During the April 1999 meeting in Sarasota, Florida, the goals, tasks and assignments were drafted and can be reviewed in previously published meeting minutes. The objective of all subsequent committee meetings is to work toward the completion of those goals.

Committee Plan

The objective of the breakout session for the Committee on Bridge Railing and Transition Hardware was to work toward the completion of preparing future publications or guides on bridge railings and transitions. The successful completion of these guides would result in clear and concise compilations of crash-tested bridge railing and transition systems for use by researchers, bridge and roadway engineers in State Departments of Transportation, county engineers, consulting engineers, and hardware manufacturers.

The mission statement for this committee is (April 1999):

"to aid, oversee, or participate in the preparation and maintenance of hardware guides for crashworthy bridge railing and approach guardrail transition systems."

Meeting Summary

At the start of the subcommittee meeting, Mark Bloschock and Ron Faller provided two handouts to the group. The intent of the handouts was to stimulate discussion within the group as well as to attempt to bring resolution to the planning stages for this subcommittee. The handout topics were as follows:

- (1) a draft copy of a Request-For-Proposal (RFP) to begin the process of hiring a third-party agency to perform the research objectives identified therein (see Attachment B), and
- (2) a document which showed a sample format for the bridge railing and transition system guide (see Attachment C).

Significant group discussion followed the dispersment of the handouts, although it occurred without coming to an overall consensus of the subcommittee attendees. General discussion was given to the following topics:

- (1) opportunities for funding the tasks identified in the draft RFP;
- (2) partnering with the AASHTO Task Force for Roadside Safety, AASHTO Subcommittee on Bridges, or FHWA;
- (3) general details for the document format;
- (4) urgent need to get the bridge railing and transition system information out to the public as soon as possible;
- (5) combining this subcommittees' efforts with other TF 13 subcommittees;
- (6) adding the bridge railing and transition information to the existing hardware guide; and
- (7) making a stand-alone bridge railing and transition system document.

Following the group discussions, it was observed that a larger percentage of the subcommittee attendees wanted the new document combined with the existing hardware guide. However, the subcommittee co-chairs believe that this approach would result in considerable delays in completing a final document. In addition, since the existing guide is not necessarily set up in the same format as that recommended for the bridge railing and transition system guide (i.e., photos, system details, crash test information, etc.), we strongly recommend that a separate guide be published. Finally, the subcommittee co-chairs would like to bring closure to this phase of the planning by the end of the April 2001 Task Force 13 meeting. Hopefully this closure will result in the acceptance of the draft plan described in the enclosed RFP.

**AASHTO - AGC - ARTBA Subcommittee on New Highway Materials
Task Force 13 - Standardization of Details for Bridge and Road
Hardware**

**Subcommittee on Sign, Luminaire, and Traffic Signal Support
Hardware**

Co-Chairs: Pat Collins (WYDOT) and Mike Stenko (Transpo Industries, Inc.)

The Subcommittee met on September 18, 2000 in Jackson, Wyoming. A list of the members in attendance is attached. Collins distributed a brief agenda for the meeting, which is attached.

Collins presented a brief summary of the last meeting, and notes of same. The notes were approved. Collins also reiterated the need for this Subcommittee, and the whole Task Force, to come up with a way(s) to maintain and update its hardware guides. He encouraged the members to give this their consideration, and forward any suggestions to him or Art Dinitz.

Collins then presented an update on the effort to initiate a pooled fund effort to update "A Guide to Standardized Highway Lighting Pole Hardware". He stated that the solicitation of the states for use of State Planning and Research (SP&R) funds was complete. Enough states had agreed to participate such that sufficient funding had been obtained to start the project. The next step is to gain approval of the Research Advisory Committee and Executive Staff of the Wyoming Department of Transportation(WYDOT) to commit \$40,000 of their SP&R funds and to have WYDOT function as the lead DOT. Next, the Federal Highway Administration will need to approve the effort. Then, the approvals are essentially complete, and the project can be initiated. Collins then presented a brief pooled fund project sequence ending with an updated guide, and final report. He stated that he hoped to get one or two members of Task Force 13 on the Technical Advisory Group. Some items were discussed for possible inclusion in the updated guide: standard designs, structural aspects of breakaway devices, call boxes, mail boxes, illuminated sign panels

Next the Subcommittee discussed the effort to review/update "A Guide to Small Sign Support Hardware". A group met in St. Louis, MO on August 2, 2000. Joe Frazzetta gave a brief report on this meeting during which the group went through the document and redlined it for changes. A more complete report is attached hereto. One outstanding issue is how to handle the dual metric and imperial units. Collins will provide the AASHTO guidelines for units to Frazzetta. This group may meet again before the next meeting of the Task Force.

This concluded the business of the Subcommittee.

List of Recommendations Resulting from August 2, 2000, Sub-committee Meeting

Go over "generic" drawings and recommend changes and who will do them. Have drawings include dual (metric & standard) measurements.

Produce the book in a 3-ring binder form so that updates can be easily added.

Also make the book available on disk.

Develop and follow a standard procedure for new inclusions in the book.

Include ALL federally approved products in the book.

Produce timely revisions to the book.

Set a date for the publication of the revised book. 1/1/01 was suggested.

Make the entire book be produced in dual measurements.

Have Nick Artimovich write a letter requesting drawings for the products listed in the book that do not have a current drawing published.

The committee will revise the book and present it to AASHTO in a printable format. The committee will be responsible for yearly updates for five years and will then completely update the book for republication.

6-1

SUBCOMMITTEE #6 – WORK ZONE HARDWARE
TASK FORCE 13

The minutes of the fall 2000 Task Force 13 Meeting (September 18 & 19) Jackson Hole, Wyoming:

Mr. Nicholas Arimovich
FHWA
400 Seventh Street, S.W. HMHS
Washington, D.C. 20590

Subject: Subcommittee #6 (Work Zone Hardware)
Task Force 13 fall 2000 Meeting
Jackson Hole, Wyoming

Dear Mr. Artimovich:

Enclosed is a summary of the minutes of Subcommittee #6 at Task Force 13 held in Jackson Hole, Wyoming on September 18th, 2000. The primary mission of Subcommittee #6 is to consider the need for developing a manual or guide for work zone hardware and in this guide list the hardware that is currently available.

The minutes of our meeting were as follows:

- A. Mr. Barry Stephens volunteered to take over the Co-Chairmanship position vacated by Mr. Mike Essex who passed away on June 10, 2000.
- B. There was a lively discussion regarding whether there was a need to develop standard attachment hardware for truck mounted attenuators (TMA's) on the back of shadow vehicles. One manufacturer was against developing a standard, especially if it would preclude their TMA from being specified (their unit slides under the truck during a portion of the impact). They did state that they had developed interface hardware that would allow their TMA to mount to an existing shadow vehicle that was set up for another manufacturers TMA's. Some in the room felt there might be a need for a TMA Attachment standard; TMA owners could switch between TMA manufacturers without modifying the weldments at the back of their existing trucks. Others were not certain if there was a significant need. A pole of the three to five State engineers present did not yield much support for such a standard. The discussion concluded by stating that perhaps the Task Force 13 Subcommittee #6 was not the best group to resolve this issue. There are other committees more aligned with mobile equipment issues that might be better suited to review this task.
- C. An open discussion was initiated to review the possible items that could be included in a new Work Zone Hardware Guide. The total list included the following:

- TMA's
- Crash Cushions/ End Terminals
 - Permanent
 - Temporary
- Signs – Unanchored
- Signs – Surface Mounted
- **Barrier**
 - Water-Filled
 - Portable CMB
 - Zero Deflection Barrier
 - Transitions between
- **Channelizing Devices**
 - Cones
 - Barriers
 - Barricades
 - Delineators
 - Water Filled
- Breakaway signs
 - Ground mounted
- Trailer Mounted Devices
 - Arrow Boards
 - Message Signs
 - Portable Signs
- Warning Devices

The items in **BOLD** were considered worthwhile for a possible work zone hardware guide. The group consensus was that the manual should include both proprietary and non-proprietary hardware. The group also recommended that the guide should be accessible electronically, at a web site, or it would not be worth doing (it would be out of date the day it was printed).

Mr. Ghara closed the WZ sub-committee session with the following:

Views will be solicited by mailing a copy of these minutes to the state DOTs and the general participants of the Task force 13 to poll the reception to our approach as listed above. Based on this information, appropriate modifications to our specific goals will be made and will be discussed at the next meeting.

8-1
September 2000

Task Force 13

Sub Committee on

At Grade Rail Road Crossing

Jackson Hole, WY

Participating:

Dean Alberson	Texas Transportation Institute	Chair
Robert Blyth	Spec Structure Design	Co - Chair
Roland Stanger	FHWA-SD	roland.stanger@fhwa.dot.gov
Barry Stephens	Energy Absorption Systems, Inc.	
George Stelemille	North Dakota DOT	gstelemi@state.nd
Martha C. Kapitanov	FHWA - Washington D.C	
Jim Crowley	Quixote Transportation Safety	jcrowley@quixtrans.com
Dave Hubbell	Composite Structural Design Inc.	dhubbell@adelphia.net
Mike Stenco	Transpo Ind.	
Mack Christiansen	UTAH DOT	mchriste@dot.state.ut.us
Dick Albin	Washington D.O.T.	

Preamble:

At the spring meeting in Savannah, Georgia, it was proposed that this sub committee meet again to possibly be dissolved at the meeting in Jackson Hole. The dissolution would be dependant upon duplication of the sub committee's work through the AREMA organization.

In Jackson Hole, Alberson showed some of the standards from the AREMA Manuals.

Panel Discussion:

Dean Alberson proposed at the outset to dissolve the sub - committee on *At Grade Railway Crossing* and waits for a second motion, which never came.

David Hubbell expressed that in the future, there will be much federal money put into this area of transportation, by way of maintenance & research and development and future specifications development.

Reply by Dean Alberson; John Sharkey, head of committee 36 for AREMA has stated that very detailed AREMA specifications exists on the subject. In addition, AREMA provided the sub-committee with a copy of their specifications. Several specifications were presented to the sub-committee showing good detail on most highway grade crossing hardware.

Mr. Hubbell stated the following:

- At grade railway-crossing equipment is maintained by the Railway Corporation and not by the D.O.T.
- Roadway approaches must be maintained by the appropriate D.O.T.
- Research & Development and Maintenance monies as provided by the federal branches will shift from the Railway commissions to the D.O.T.'s
- Presently there are many discussions as to the Right of Ways between the D.O.T and the railways.
- Safety issues of this sub - committee should be focused on looking at the roadway approaches vs. from the railway crossing point of view. Since this is where the major shift in the money will be in the near future.

Question to the committee:

Is there anything else that can be done by this sub-committee to add the information of the AREMA manual to the D.O.T. listing of information?

Replies:

- Use the AREMA as a general layout to new railway guide.
- Instead of a hardware guide, it should be a system wide guide.
- Get someone from AREMA to join in on the discussion group.
- Get DOT personnel from different states to participate in the development of a new charge for this sub-committee

Dean Alberson will contact the above noted people and invite them to the next meetings. Mr. Mack Christiansen will provide further information about the RailRoad show in southern California.

Mark Bloschok will get TxDOT employee supervising railroad grade crossings to attend next meeting.

Conclusion:

It was proposed that a new mandate be given to or developed by this sub committee in light of the above presentations and subsequent discussions.