Task Force 13 Spring Meeting
Sarasota Florida, May 11 and 12, 2006

Task Force Co-Chair **Pat Collins** welcomed participants to Florida, noting that when he left Cheyenne, Wyoming, the day before the temperature was 26 degrees F. with light snow on the ground. With over 90 participants this was one of the best-attended Spring meetings of Task Force 13. He expressed our thanks to **Ellie Dinitz** who was responsible for the hotel, meeting room, and dinner arrangements. He also introduced his Co-Chair **John Durkos**, Chairman Emeritus **Arthur Dinitz**, and Secretary **Nick Artimovich**.

After demonstrating the safe and proper operation of the "Froggie Robotic Pen" which all participants received as part of their registration, **Collins** asked for all attendees to introduce themselves. A hard copy of the Task Force 13 Roster / Mailing List was also circulated for any necessary updates and corrections to be made.

Collins then asked for approval of the minutes of the Fall 2005 meeting in Perdido Beach, Alabama (http://www.aashtotf13.org/pdf/TF13PerdidoMinutes.pdf) The motion was made by **John LaTurner** and seconded by **Durkos**. He then reviewed the day's agenda noting that one of the subcommittees, #8 on the Rail Highway Crossing Hardware had been trying to put itself out of business. However, **Dinitz** noted that the AASHTO Technology Implementation Group is still interested in low cost RXR improvements so RR subcommittee is still important. **Collins** noted many communities in Wyoming were petitioning to cut the use of train horns in residential areas, but this requires that other improvements must be in place, such as four gates, or a wayside horn. RR crossings are still a problem nationwide and **Frank Julian** noted that FHWA and FRA are working with wayside horns, as it is a hot topic.

Subcommittee Name and Number	**Co-Chairs**
Subcommittee #1 Publications Maintenance	Nancy Berry (ret) & Matt Leahy
Subcommittee #2 Barrier Hardware	Will Longstreet & Bob Takach
Subcommittee #3 Bridge Rails and Transitions	Mark Bloschock & Roger Bligh
Subcommittee #4 Drainage Hardware	Adam Neuwald (ret) & Nathan Paul
Subcommittee #5 Sign, Luminaire, &etc Hardware	Mike Stenko & Greg Fredrick
Subcommittee #6 Work Zone Hardware	Paul Fossier & Barry Stephens
Subcommittee #7 Certification of Test Facilities	Ron Faller (ret) & John LaTurner
Subcommittee #8 Rail Highway Crossing Hardware	Dean Alberson & Rick Mauer

Summary of Subcommittee Discussions

Subcommittee #1 Publications Maintenance. **Chuck Patterson** of Virginia DOT was introduced as **Nancy Berry**'s replacement on TF13, (but not as the subcommittee co-chair.) **Berry** noted that VDOT doesn't have a budget yet so their efforts to update the Task Force website will be somewhat limited.

The Publications Maintenance Subcommittee has evolved. **Matt Leahy** went through their mission statement, and the website is biggest thing to come out of the Subcommittee in

recent history. The mission statement includes promotion of electronic publishing, standardized electronic document format, links to appropriate standard, ensuring publications will not become obsolete, supporting publications through website. Website will be a clearinghouse for highway hardware details. Have identified sources of funding, two subcommittees have got AASHTO funding for their publications. Assisting in review of publications and getting them ready for posting.

TTI is currently hosting space for our site (www.aashtotf13.org), but VDOT has been doing actual maintenance, which has taken about 8 hours total over the last year. When subcommittees look at their pages on website they have to realize that someone in their subcommittee needs to be able to do that in order to keep their own work up to date. **Berry** has a person in her group who has the necessary software to post changes and updates to the website and that is how changes are made, including minutes, meeting notices, etc. VDOT may not be able to handle the electronic publications themselves, including updating. Barrier subcommittee experience will be valuable in telling us how this can be done. Once most of the "bugs" have been worked out the Barrier subcommittee's publications the others can follow.

Mac Ray's work has set format for how we want these publications to be brought together, but the real problem now is how do we get funding? Thru subcommittee chairs? What other means, i.e. charge for viewing the website? Regardless who hosts website, we need someone to actively maintain the pages and publications. Who do we pay to do this?

The subcommittee also recommended that the AASHTO Style Manual be linked on TF13 homepage so we can use it in developing publications, and that only approved documents should go on our website.

Open to floor – what should subcommittee's task be in the future? **Chad Heimbecher** volunteered to take over the current maintenance activities because this is what he does for his company, and currently the Task Force's needs take a minimal amount of time. Publications Maintenance home page should have links to page formats so that the drawing owner can submit the drawings ready to post.

The Barrier Subcommittee has not yet gotten to the point where they know if this overall process has been perfected, or that it can be used by other subcommittees. There have yet been no drawings submitted to go through process. Barrier subcommittee has put time into setting "designators," accepting drawings in a format to be reviewed, etc., etc., so this is not insignificant.

Collins recommended that the Barrier Subcommittee go thru this process and document questions and problems to be posted for use by others. The person appointed to keep track of drawing "designators" would be in the ideal position to do this. Still sorting out who hosts site, who does work, etc., but the Publications Maintenance subcommittee ought to be responsible for this gate keeping function.

Will Longstreet noted that a "gatekeeper" is needed to handle designators, update drawings, update pages, contact Tech Reps, post drawings and photos, move drawings from "review" to "ready" status to website once approved by vote. Seeing that there are many systems out there that have not yet submitted drawings, this will keep someone busy when these come in. Tech Rep gets drawings ready to send to gatekeeper.

Berry asked if this same person/process is needed for other subcommittee publications? Yes, this gatekeeper could be a full time person doing this for TF13. This is more than Chad volunteered to do, but we are going to keep his nose to the grindstone and make him regret that he ever raised his hand at a Task Force 13 meeting. Ah, so you did make the effort to read the draft minutes. Good for you.

Barry Stephens noted that TTI would need funding to do this on a full time effort. He asked if the $50 K that the Sign Supports Subcommittee received might be used to do this in-depth publication maintenance? No, as that NCHRP money is already obligated to a specific purpose.

The Task Force has now reached the point where we actually need funding in order to move things forward. **Dean Alberson** said TTI could use the $50 k to do this for a year. **Collins** – 20-7 funding is dedicated to Supports guide so it can't be redirected. Going after pooled funds and research funds is fine to get us started, but will need to consider membership fees, selling on-line services, or other means of revenue enhancement.

Berry – Publications Maintenance is promoting their mission, but they are not able to do this as a subcommittee: we need a paid position to handle these matters, and would be best if they were knowledgeable about the hardware we are dealing with. Should password protected membership list be posted?

Collins closed the discussion saying that TF-13 needs $$$ and a treasurer to deal with website issues.

Durkos honored **Harry Taylor** on his retirement from FHWA by showing an old photo with him, **Jim Hatton**, **John Viner**, and other noted roadside safety advocates.

<u>Subcommittee #2 Barrier Hardware</u>

Longstreet gave the following presentation:

Durkos: How should TF-13 deal with tensioned cable barrier systems? **Dinitz** serves as co chair on Joint Committee's New Materials and Technologies subcommittee, and on TIG (Technology Innovation Group.) TIG is very interested in promoting new technologies – they recognize new technologies that aren't fully implemented nationwide and promote them - interested and influential DOT people are on TIG. Precast roadway slabs, precast beams are among these.

High tensioned cable median barriers are currently of great interest to TIG. Crossover crash tragedies have generated a great need even though these crashes are a small percentage of 43000 fatalities. TIG wants a TF13 subcommittee to set up a guide to the use and specifications of pre tensioned cable median barriers. This is something where not only does TF13 already have the infrastructure set up to produce a useful guide, but all manufacturers already participate in TF13. TIG wants this info ASAP and we should be able to have something ready this fall. We can shine with this, and may be able to get funding for this effort, and will put us into a position to offer this project and TF13 Guides as a service to AASHTO and FHWA.

Dean Alberson noted that he already has an NCHRP Project to look at high tensioned cable guardrails. Dean has been in contact with all US suppliers of cable barriers. He is basing his evaluation on available state data and crash testing. Have sent out 100 surveys and have 25+ states that have responded. **Alberson** will present this info to the June meeting of the AASHTO Subcommittee on Design. The report from this project should be able to go directly into TF13 Barrier site.

Durkos: TF13 does not get into use warrants and guidelines. We compile standards, drawings, and specifications that can be used to compare competing devices. **Alberson's** project is probably more in scope with the TIG request.

We want comments from State DOTs and Manufacturers on our documents:

Mike Kempen: Sees lots of things in field that states should consider when specifying cable barriers. Systems have evolved not to optimize performance but to meet bidding requirements. At this point systems are increasing post spacing to minimize costs. (non tensioned systems are falling out of favor as they are ineffective once struck.) Maintenance benefit comes from stretching cable but there is no standardization of prestretching requirement or standard. Some cables are not able to maintain the initial tension and have to be retensioned on the roadside. The highway community needs to standardize where we want prestretching.

Chuck Norton: W-beam guardrail was generic, unlike the many proprietary cable systems. He agrees that there is a need for some standardization on footings, spacing, etc.

Ron Faulkenbery: All systems are different and their performance is demonstrated by the deflection distance during the crash testing. Gibraltar has 30-foot post spacing and they believe it is the safest as it minimizes the number of posts, the part of the system that causes most damage. [Editor's note: the goal of a cable median barrier system is to reduce serious cross median crashes, not minimize sheet metal damage. Optimum spacing ought to minimize gating.] State DOTs are concerned that a cable barrier thru a sag vertical curve needs a way to hold cables down, but each manufacturer has addressed that issue in their own way. Post spacing has nothing to do with performance as no posts hold the cable down – all systems will release upon impact. Standardization should be based on testing, not post spacing.

Durkos: All standardization can be traced back to testing. Standardization of cable barriers testing in proposed 350 update recommends 600 feet in length of test article in order to minimize the effect of the end terminals on the deflection distance. Cable tension during the test is recommended to be standardized at 100 deg F. Beyond that the manufacturer may have the test run at the largest recommended post spacing. Finite element modeling simulation may be used to estimate deflection in reduced spacing.

Richard Butler: Unless your test article is 600 ft or longer you are testing the end blocks, not the cables and post connections.

Divyang Pathak: From a DOT perspective, since testing is done on flat terrain they want to know what about sloped locations, where do you place it with respect to ditch? Soil conditions in the median affect anchorage of posts or sleeves. Variance in length of test article is a problem.

Mark Bloschock: There is a lot of confusion and TX is putting in quite a lot of cable median barrier. From a state's perspective it is not a matter of relative cost between various cable systems: cables are being put in because they are getting more medians protected for their money: 600 miles to date. No agreement for use of TL3 or TL4. Texas is specifying a maximum 8 feet of deflection.

Richard Butler: Brifen tested with 1000-foot test article with 8.5-foot deflection. In order to meet TX spec they shortened up the test article and got an 8-foot deflection. There is clearly a need for standardization of test conditions.

Rick Mauer: Nucor wants standardization as well. They tested their cable system to TL4 and failed because they picked the "wrong" CIP. He believes that the same weak point could exist in every cable system.

Dinitz: We've heard the importance of getting DOTs involved. TIG's expert panel could use the expertise of these experts on barriers. **Julian** noted many of the known state experts are on TIG and have already discussed much of this. Looking to develop a website because things are moving so fast.

<u>Subcommittee #3 Bridge Rails and Transitions</u> (taken from **Bloschock**'s notes):

The subcommittee identified users of guide. Cities, counties, state DOTs, FHWA, consultants, architects, manufacturers, citizens, etc…

All Task Force 13 members are asked to view the Guide on the TF13 site. Sign in, review the format, and comment back to the co-chairs.

Items to be included in the guide:

Items tested to Report 350
Items with FHWA acceptance letter

Items with FHWA equivalency
Items tested to Update of 350

Required categories:
See-thru or open rails
Aesthetic rails*
Retrofit rails
Combination (traffic and pedestrian rails)
Precast rails (per Faller's suggestion)
Metal rail on concrete parapet
Aluminum rails
Steel rails
* **Julian** recommended the guide be linked to the Context Sensitive Solutions website.

Other documentation possibly to be included:
Crash test reports (for new report already digitized)
Crash test videos
Simulation reports
Contact information
Weight per foot table

The guide will need a high degree of searchability:
Keyword searching
Searchable link to 350Update
Include a thumbnail of each drawing, photo, etc., so that each can be previewed
Include file size for photos, drawings, videos, etc.
Longstreet recommends use of SHAREPOINT free software
Database on website hosting computer
MySQL freeware database program
MyPHP myadmin, freeware database program, a management program that interfaces with tables of data

Other comments:
If the guide does not include a particular transition item, ie cable to bridgerail or guardrail, link to another guide that does.
Adopt Barriers Subcommittee nomenclature for posting items during the review process, ie "in progress," "ready," "approved."
Format looks OK in HTML but use PHP script pages for flexibility (**Heimbecher)** For website questions, check with **Heimbecher** for programming details, and with TTI server contact to see if TTI can do all this.

Subcommittee #4 Drainage Hardware (Thanks to Nathan Paul for these minutes)

Introduction of attendees
Co-Chair Adam **Neuwald** indicated this will be his last meeting. However, a NPCA representative will likely be attending future meetings.

It was noted that ideally a DOT official should fill the vacant position. However, **Neuwald** indicated the NPCA representative would likely fill the co-chair position if a DOT official could not be found.

Old Business

Summer and Winter Conference Calls
The committee has been attempting to recruit members from the state DOTs. A number of DOT representatives indicated they are interested in the Drainage Committee, but could not get the funding to attend the actual meetings. The committee plans to hold a summer and winter conference call so more DOTs can be involved with out having to actually attend a meeting. ABT Drains indicated they could host the initial conference calls.

The committee plans to have their next conference call the first week of August. Nathan Paul will send a reminder email a few weeks prior to set an exact date and time that will work for a majority of committee members.

Updating of Drainage Hardware Guide
A brief overview of the document was presented. The committee felt that the format and procedures developed by Subcommittee #2, Barrier Hardware, should be followed for updating the current document which is available online at the following address: http://www.aashtotf13.org/Standardized-Drainage-Products.asp

Neuwald suggested creating a survey that will be sent to each state DOT's drainage/hydraulics department. The survey will be used to determine if the document is currently being used, if the document needs to be updated and which products should be removed and which need to be added. The survey will also request that DOT's submit their standard drawings (if similar to the current format) and ask if the survey recipient would be interested in assisting in the updating and review of the document. It was also suggested to include a question on stormwater treatments systems.

The committee plans to have a DRAFT survey complete by mid July for review during the August conference call. A brief discussion on the distribution method ensued. A comment was made that emails may not be opened or may not make it through security filters, thus a mailed hard copy may be the best method of distribution.

The committee hopes to have results back for review during the Fall 2006 meeting. A suggestion was also made to contact the various associations, which represent concrete, aluminum, plastic and corrugated steel drainage products. Each association or industry group would be responsible for recreating and updated applicable product drawings for inclusion in the online document. Drawings that are not updated will not be included in the new version. Assuming the survey provides a positive response in regard to the DOT's interest and use of the document, it may be easier to get the other industry groups involved with the subcommittee, which has been struggling with membership.

Paul indicated that a hydraulics engineer with CalTrans will be attending the fall meeting and that a representative from the Utah DOT will be able to participate via email and conference call.

A discussion on funding to assist with the updating process ensued. It was suggested to contact the AASHTO Drainage Committee. Funding would be easier to achieve if the group had a sponsor on the AASHTO Drainage Committee. It was also suggested to determine if the AASHTO Drainage Committee is doing any work on stormwater treatment. It would likely be easier to obtain funding through a group like NCHRP if a research project on stormwater treatment systems was incorporated into the updating process.

A request for a longer meeting time has been submitted to TF13 co-chair Pat Collins.

ACTION ITEMS:

DRAFT a survey by mid July
Conference call to be held to first week of August
Distribute survey by mid August
Compile survey results prior to Fall 2006 meeting
Contact applicable trade associations informing them of the project and inviting them to the fall 2006 meeting

Subcommittee #5 Sign, Luminaire, &etc Hardware Mike Stenko & Greg Fredrick

Chairman **Fredrick** opened the subcommittee meeting at 12:30 and circulated a sign in sheet. Co chair **Stenko** was unable to attend the Task Force Meeting.

The group discussed the Update to "A Guide to Small Sign Support Hardware". This document is being updated as part of an NCHRP 20-07 project. The group noted that the title of the new manual will be "Ground Mounted Sign Support Guide." The project has been awarded to Dr. Mac Ray, and he received the notice to proceed on April 1. Because Dr. Ray was unable to attend the meeting, **Fredrick** presented the PowerPoint presentation prepared and forwarded to him by Dr. **Ray**. The look and feel of the update will be similar to the "Bridge Railing Transition Guide". Dr. **Ray** is collecting materials and will use these to put a site together for the Fall 2006 meeting. Dr. **Ray** needs the manufacturers to provide him with the FHWA acceptance letter, a good picture, the drawing files in pdf, dwg or dgn format, contact information and any crash test videos that may be applicable. The group was encouraged to contact Dr. **Ray** at mhray@wi.edu to get the specifics as to how to get the information to him. It was emphasized that we need the information to get the manual updated.

The group also discussed "A Guide to Standardized Lighting Pole Hardware". **Fredrick** noted that the RFP had been revised to include a reference to past Task Force efforts, and indicated that it is being reviewed by Texas, California, and Pennsylvania. The RFP will be posted in the near future, as comments were to be received by the end of this week.

The group discussed several research efforts currently underway in the sign support arena. **Macchietto** updated the group on the Texas pooled fund study, noting that the University of Texas is looking into steel connection details, base plate thickness, the number of anchor bolts and the bolt circles and how this influences the fatigue performance of the joint. The test matrix has been developed based on the pooled fund states' standard details and testing will begin in the next couple of months. **Fredrick** discussed the ring-stiffened connection being tested at the University of Wyoming. Other research efforts noted were those at the University of Minnesota, Purdue University and Lehigh University. Fredrick noted that Lehigh has been awarded the NCHRP 10-70 contract to study "Cost Effective Connection Details for Highway Sign, Luminaires and Traffic Signal Structures". The purpose of the project is to develop an analytical test protocol to be used to identify fatigue categories of in service and alternate connection details. Dr. Richard Suasse is the principal investigator, and notice to proceed was given in April. The three-year project will terminate in 2009. Currently the panel is reviewing the work plan.

The group's discussion turned to fatigue of these structures, and **Macchietto** noted that a certain level of education is needed to raise the owners' awareness that even though the support may have been designed to the current specification, failures can still occur. He noted a recent high mast failure in South Dakota. It was noted that in addition to the wind loading, and the low damping characteristics of these supports, weld defects contribute to these failures. To this end, examination of welds needs to be looked into. **Macchietto** noted that many owners are not aware of the effects of vibration and mitigation options available to them to resist this aspect of fatigue. It was suggested to include videos of structures that have exhibited vibration and the effects of mitigation on these structures in the updated manual. The manual should also include fatigue resistant details and damping devices. **Macchietto** noted that a disclaimer should be considered in the manual noting that failures could still occur and are difficult to predict.

Fredrick reviewed the action items, which were:

Dinitz will visit with **Stenko** to get the original marked up red book of the "Guide to Small Sign Support Hardware" and the discs that were completed over several years beginning in 2001. These should be copied and the copy sent to Dr. **Ray**. **Fredrick** did discuss this with **Stenko** subsequent to the meeting.

Fredrick will email **Ray** requesting a resolution for the photographs. He will also visit with Dr. **Ray** to ensure that the hinged slip bases will be included in the "Guide to Ground Mounted Sign Supports" either under the systems or components area, and where he is proposing to include these. The group also questioned whether delineators be included and whether these would be only steel delineator posts. Finally, we need to discuss with Dr. **Ray** the generic details, and who is responsible for completing these.

Fredrick will visit with **Artimovich** to determine (1) whether there are crash test approval letters for delineators and (2) clarify the height and mass at which delineators are required

to be crash tested. **Fredrick** or **Artimovich** will pass this information along to Dr. Ray as a basis for including Delineators in the new Guide.

Subcommittee #6 Work Zone Hardware Paul Fossier & Barry Stephens
These two WORD files contain graphics of warning labels so I have left them intact.


2006-5 Work zone minutes SARASOTA FL


Plastic Water-filled Longitudinal Barriers

Subcommittee #7 Certification of Test Facilities Ron Faller (ret) & John LaTurner (Jeff Shewmaker will take Ron Faller's place as co-Chair)


Test Documentation and Reporting - Jeff S


AASHTO TF13 Spring 2006 Subcommittee I


AASHTO TF13 Spring 2006 Subcommittee I

Subcommittee #8 Rail Highway Crossing Hardware Dean Alberson & Rick Mauer

Did not meet. This subcommittee intends to meet annually to discuss the review and update of the Rail-Highway contacts list as necessary.

SPECIAL SUBCOMMITTEE REPORTS

Marketing: The "Froggie Robotic Pen" is a marketing souvenir. I, for one, will continue to attend Task Force 13 meetings for the sole purpose of collecting these goodies. I am glad you are still reading these minutes. ☺ Seriously, folks, these souvenirs with the web site are good reminders to members and others of our presence.

One of our stated goals as a task force was to include more state DOT people. We had 21 state reps in Alabama. Have 12 state people representing 5 different states in Florida, which is good for a spring meeting.

As there has been more "meat" in recent TF meeting than there has been in the past, we should be able to generate more participation. Cable barrier discussion was most interesting.

New Standardization Areas: No co-chairs at this time. No suggestions for new efforts were received from the floor.

TASK FORCE 13 EXECUTIVE BOARD MEETING

Collins, Durkos, Takach, Longstreet, Fredrick, Bloschock, Mauer, LaTurner, McDonnel, Neuwald, Paul, Faller, Alberson, Fossier, Stephens, Artar, Bligh, Leahy, Julian, Dinitz, Artimovich.

Fall meeting in Toronto with TCRS either week of Sept 26 or October 2.

AASHTO approval process for our documents. **Jim McDonnel** noted that SCOH is in the midst of developing a new system for naming and categorizing publications. Specs manuals, guide, guidelines, report, survey, reference, etc., etc., will replace some 40 other names. If TF-13 will name our guides "A Report Of XYZ Committee" it does not have to be balloted by AASHTO and it only has to be approved by the next level of oversight. Our titles "Guide to Standardization Of …" may be promising more to the user nowadays because there are so many proprietary products.

Collins: standardization is in the testing. We now need to know what to call our publications.

McDonnel: We can recommend another category of publications to AASHTO. "Report" is the highest that does not have to go through AASHTO balloting. Since our publications are never going to be static documents we never want to "finalize" them.

Alberson: has TF-13 evolved to the degree that we need to revise our mission statement and charter? Cable guide that Art discussed would bump it up to a guide status. TF-13 has never been involved in a pub that made recommendations among hardware.

Durkos: Alberson's publication will be of tremendous value to TF-13.

Faller: The barrier guide will include info on working widths, which is info on application. Does that make this a "guide"? You could argue that these are recommendations for use.
Alberson: if you include Working Width it will just be reporting the test values. The RDG is the guidance document that tells you what to do with this info.

Collins: What role should TF-13 play in the cable barrier arena?

Alberson: Need to get this info into Barrier Guide.

Durkos: **Dinitz** reported that TF13 can satisfy TIG with a tensioned cable guide.

LaTurner: What we do is survey crashworthy hardware and produce a catalog of acceptable devices.

Alberson. We have every manufacturer of high-tension cable barriers in the room today. We should send a memo to TIG and let them know what they can expect from **Alberson**'s report.

Bligh. If there is a desire to really standardize cable, we can have a role in making that happen. Otherwise we can just provide a catalog of tested hardware. **Alberson**'s report is outside the scope of TF13 and it should be used to update Chapter 6 of the RDG

Mauer: Cable systems change so fast our documents must be fluid and be updated.

Alberson: Pre stretched rope is very temperature dependent, and will drop to zero tension at 100 degrees F, but after two years of heating and cooling they will loose all pre stretch and be just like low tension cable.

Durkos: Did any states mention they were part of a pooled fund study on cable systems?

Alberson: Have not reviewed surveys yet – waiting to look at the all with equal opportunity.

Faller: Yes, there is a survey. MWRSF has designed a new bracket to hold cables and it will be tested with 16 ft spacing, s3x5.7 posts, likely use 4 pre stretched cables in the vicinity of a v-ditch. They will model its performance, then run models with spread cable heights, up to upper 30's. They will also ask users of tall cable systems about real world incidents of top cables cutting through "A-pillars."

Also wants to discuss terminals. There is a fine line when a small car hits a certain # of posts, and the terminal's performance is very sensitive with very little difference in impact location meaning the diff between upright and rollover.

Alberson asked if **Faller** would share the survey info. **[SORRY, BUT I DIDN'T RECORD RON'S ANSWER! WERE YOU AGREEABLE, RON?]**

Collins: Asked **Dinitz** if we should write letter to TIG saying that **Alberson**'s report should go to TCRS for use in the RDG and we will also use it in Barrier Guide.
Alberson's report will satisfy the TIG's request, and TF-13 can offer it as requested, but it is more appropriate for inclusion in the RDG rather than our Barrier Hardware Guide.

Dinitz: TIGs responsibility is to find new hardware and promote it. They want a guide to give users all the info they need to make decisions. Not use warrens, but info on hardware. Would love to see standardization, such as posts on centerline? Standardized concrete base for use by all posts? Whatever standardization this TF can provide will be good for all concerned. TIG wants to sell this technology and thinks this guide would be of great use to states.

Mauer: No way the cable manufacturers will standardize voluntarily. Each design has an "edge" that they promote to the states, and standardization will dilute these unique features. Any standardization will have to be done outside of manufacturers as there is no way they will give up a competitive advantage. Development of cable barrier is one of the most rapid thing highway industry has seen.

Durkos: Standardization will come from testing.

Alberson: Post attachments, anchors, posts, all features are different. FHWA-accepted Test Level 4 barriers where we haven't run small cars tests on are questionable.

Durkos: Need a grid of all characteristics including cables, post spacing, slopes, etc., etc. Better than just listing all systems.

Dinitz: Cable barriers ought to be a separate section in Chapter 6 so that it can be a stand alone document.

Alberson: Can prepare a brochure with a grid with these characteristics for the Task Force.

Bligh: Grid of existing systems and tests may not be as useful as the different test article lengths yield different deflections.

Durkos: TF13 can't do much more at this time than support **Alberson's** work.

Dinitz: We can contribute a lesson on how to evaluate / interpret the test results on the various systems.

Pathak: Life cycle costs of cable barriers ought to be included.

Artar: Can we ask AASHTO for further direction on our effort here? Why are some states limiting their cables to one system?

McDonnel: AASHTO has also asked for this info thru NCHRP and **Alberson**. **Dinitz** hoped TF13 would be able to provide info quickly on the application of the many systems.

Julian: States want to be able to compare systems and want them to compare on an even basis. If TF13 would recommend standardized testing it would help.

Durkos: States approve an approved list. Contractor only buys by cost and puts in cheapest system. Rarely are appropriate systems specified.

Collins: Task Force should write to TIG and to TCRS embracing these systems as innovative, should also say that based on our work these are the issues that need to be standardized: test length, deflection, etc. Then we can say we will put approved systems into the barrier guide.

Dinitz: TF 13 is unique in that we represent every facet of technology in safety hardware. We should put together a subcommittee by September and put onus on AASHTO to tell us what they need. With a little additional work we could explain the table and how to use it, and then also add it to RDG. But things are constantly changing more quickly than TF13 can update on a regular basis.

Durkos: We are limited by what industry has developed. The Report 350 rewrite is major step in standardizing. **Bloschock**, **Alberson, Julian, and Mauer** will draft memo and it will go thru all other manufacturers.

Future Task Force Meetings:

Spring 2007: **Monique Burns** in Connecticut is interested, but not sure her office is in line. **Dinitz** offered to help. Connecticut is part of NETC so she could possibly get help from that group. **Faller** offered Lincoln. **LaTurner** offered Virginia City. San Antonio was also mentioned. Jackson Hole is too much like a resort and may cause problems with state people.

Bloschock noted that state folks get a lot out of these meetings. TF13 is his only out of state travel.

Funding of Task Force 13 Website and Publication development.

Collins brought up the topic of Sharepoint web hosting software for the drawing review process. **Heimbecher** was receptive to using it. **Longstreet** said PennDot looked into it and thought it might be good for TF, he can send more info to members. Sharepoint can do archiving, email notices, etc., essentially everything we need for document review. It is a free Microsoft product so support is easy. PennDot may offer to support the TF publication / drawing review site. Additional discussion on merits and costs of web hosting ensued. There was some agreement with using Sharepoint but **Durkos** noted that the publication Gatekeeper would have to be comfortable with it. We will have a straw poll on this.

In order to generate funding for maintenance of our publications, **Longstreet** noted that a "clickwrap" agreement to access site also includes agreement to a usage fee. It is an electronic licensing system that charges a user fee to use site and access information. IF you get states, counties, and cities to begin using this it will become the standard source for information. It will become a cost of doing business. **McDonnel** sees this as a long term solution but states will be reluctant to pay $$$ unless they find they need the product on a long term basis. AASHTO agreed to let us put our publications on line because they wouldn't loose too much revenue because of it.

Collins: we could charge a membership fee to TF 13 meeting. How much of our attendance would that discourage? **Bloschosck**: no one would question a higher *Registration* Fee to attend. If you call it a membership fee, or anything else the auditors are not familiar with it will be flagged and questioned.

Dinitz: Could have hardware manufacturer members pay for each system listed. We need a business plan to show to states and business that we will continue to update products.

Collins: Noted we need a working group to come up with revenue plan. What about taxes?

Friday, May 12, 2006

Durkos opened with a welcome. Fall meetings generally get better attendance, but this spring meeting is very well attended. Asked membership for suggestions to improve task force operations. He mentioned that we discussed funding at the Executive Session, so funding is always on our radar screen. Dinner was exceptionally good, thanks to **Ellie Dinitz.**

Chuck Niessner discussed the various NCHRP Projects related to roadside safety. NCHRP projects funded with a portion of state SP&R (State planning and research) funds that are set aside annually from the Highway Trust Fund.

8 active roadside safety projects this year of which two are new. 4 20-7 short turnaround projects 3 of which are Task Force 13 related. For information on the projects click on the number link below:

16-04	Design Guidelines for Safe and Aesthetic Roadside Treatments in Urban Areas
22-12(02)	Development of Guidelines for the Use of Test Levels 2, 3, 4, and 5 Bridge Rails (Anticipated)
22-12(02)	Selection Criteria and Guidelines for Highway Safety Features
22-14	Improvement of the Procedures for the Safety-Performance Evaluation of Roadside Features
22-18	Crashworthy Work-Zone Traffic Control Devices (Completed NCHRP 553)
22-19	Aesthetic Concrete Barrier & Bridge Rail Designs (Completed NCHRP 554)
22-20	Design of Roadside Barrier Systems Placed on MSE Retaining Walls
22-21	Median Cross-Section Design for Rural Divided Highways (Pending)
22-22	Placement of Traffic Barriers on Roadside and Median Slopes (Pending)
22-23	Criteria for Restoration of Longitudinal Barriers (Pending)
22-24	Development of Verification and Validation Procedures for Computer Simulation Used in Roadside Safety Applications (Anticipated)
22-14(3)	Evaluation of existing roadside hardware under Report 350 update

20-7 Projects:

Task 192	**Update of *A Guide to Standardized Highway Barrier Rail Hardware***
Task 196	**Development of a *Guide to Crashworthy Bridge Rail Systems***
Task 210	**Guidelines for the Selection of Cable Barrier Systems**
Task 214	**Update of *A Guide to Small Sign Support Hardware***

For information on NCRHP projects see www4.trb.org/trb/crp.nsf

AFFILIATED COMMITTEE REPORTS

Fredrick: Upcoming AASHTO Bridge Subcommittee meeting begins on May 21 in Snowbird Utah. Technical committees that deal with roadside hardware include:
T-12 Sign Supports,
T-13 Culverts,
T-7 GR and BR,
T-11 Research
See www.iworq.com/aashtobridge2006/index.htm for more information.

McDonnel made the following presentation on AASHTO activities:

Heimbecher: Will our guides change because of AASHTO pub hierarchy?

Collins: Yes, our publications will change, and it will be important for the Task Force to carefully consider what we name our publications so that the highest level of approval will be to the AASHTO/AGC/ARTBA Joint Committee. ***We will request that the Joint Committee allow the Subcommittee on New Highway Materials and Technologies approve our documents.***

Durkos: On July 23-26 TRB Committee AFB20 Roadside Safety Features will meet in Jackson CA and positive protection will be the topic.

Donna Clark could not be present and asked **Durkos** to brief the Task Force on ATSSA activities:
The Guardrail Committee focused on membership recruitment of contractors, designers and consultants. Focused on webinar (one is by **Heimbecher** on removal of GR) Focused on reducing legal liability exposure. Focus on GR Roadside Safety Program (best practices) using state Strategic Highway Safety Plans.
Training: Guardrail Installation Training, and Longitudinal Barrier Systems. Will now ask for course sponsors for closed courses. For information on ATSSA training contact tammyl@atssa.com

National Work Zone Safety week kickoff began on April 3 Washington DC.
National Work Zone Memorial Wall can be scheduled around the country.
SafeTeaLu requires Strategic Highway Safety Plans by October of 2007.
ATSSA Legislative Fly in will be on September 13 and 14 and in conjunction with the ATSSA mid year meeting, September 14-16.
ATSSA national meeting in January, 2007, in San Antonio.

Old Business and New Business:
Task Force meeting in the Fall of 2006 is still planned for Toronto, Ontario, but date is not finalized. Last week in Sept or first week in October. If flying, make sure you have a passport. Although Congress put off that requirement for a couple of years, it may ease your way through Customs.

Suggestions were discussed for the Spring 2007 Task Force meeting. The following sites were discussed, and received the number of votes indicated (each attendee could vote for their top two choices):

Jackson Hole, Wyoming 45	Lincoln, Nebraska 23
Virginia City, Nevada 22	San Antonio, Texas 12
Connecticut 10	Chicago, Illinois 3
Milwaukee, Wisconsin 2	St. Louis, Missouri 1

Subsequent to the meeting **Collins** noted that he and **Frederick** would begin collecting information for a possible meeting in Jackson. He also said that the "off season" from mid-April to the end of May could provide dry slopes for those who would like to ski, or blizzard conditions for those of us who don't.

Collins: Reported on Executive Board discussion. Besides the notes above…

Dinitz suggested that the Task Force do something with cable barrier systems to satisfy TIG. Our difficulty is deciding where we fit in this issue of cable barriers, post spacing, deflection, pre tensioning, etc. These are all issues that lead to confusion. TF should make a recommendation to TIG that testing of cables ought to be standardized in order to make comparisons on a level playing field. *A working group consisting of **Mauer, Julian, Bloschock, Alberson, Faller** volunteered to develop this letter. The TF Executive Board and all cable manufacturers shall have an opportunity to review this letter before it is sent.*

Technical Presentations:

Ron Faller – Recent research at MWRSF

- Long span guardrail system funded by Midwest pooled fund study. Long span Guardrail with Midwest Guardrail System consists of leaving a 25-foot gap without posts. Ran the 2270-pound auto at 100 kmh at 25 degrees. The offset was 12 inches from back of CRT post to face of headwall. In addition there were 3 CRT posts on each side of span. No nesting as it was a single run of w-beam. The system passed as the maximum deflection of 7 feet 8 inches (2.341 m) occurred near the end of headwall. The "working width" was 7 feet, 10 inches. In order to refine the worst-case scenario the system will be retested with post having no gap between headwall. In addition the Critical Impact Point will be moved upstream to try and snag the system.
- 32-inch NJ half section BR. Previously approved to PL-2 and TL-4. 120-foot long system. Tested to the then-proposed TL-4 350 update condition with 10 000 kg. 90 km per hr. 16.1 degrees. Truck box overtops rail – failed as truck rolled over the barrier. Used Ford box mounting to truck rails.

Chuck Plaxico: Safety research at Battelle Memorial Labs.

- Effort to develop a non-proprietary 50 inch tall Portable Concrete Barrier to Report 350 criteria. Currently have a 32-inch pin and loop design and the additional 18

inches of height are to provide a glare screen. Finite Element Modeling was used to aid in development and evaluation, and the performance was verified with a full-scale test. The FEM looked at 32" and 50" barriers using the "reduced element" pick up. Got same performance with the 32" FEM and full scale as the pickup went on top of barrier and stayed there. Friction had a very different response on lateral deflection of barrier, but almost no influence on trajectory of the truck. Joints stretch upon impact and can create a snag point on the end of next segment. As the proposed 50 inch PCB is 24 in wide at base and 6 inch wide a top, the slope of the stem is steeper than on shorter Jersey barriers. Tried modeling a number of pin and loop arrangements. Double shear is most secure, but too many loops to be practical, so went to double shear on top and bottom, and "anti symmetrical" in the middle. FEM showed good performance with design based on 10-foot long segments. When brought to the PCB manufacturers they preferred 12-foot segments for a number of valid reasons. Re analysis showed same response using a longer barrier segment. FE Evaluation values were lower than those on the 10-foot segments. Tested with 17 PCB segments linked together. The Chevy 2500 Silverado Pickup was smoothly redirected. Height prevented any vehicle debris from crossing barrier.

Alberson, Recent TTI Research.

- Successfully tested two New England Transportation Consortium Bridgerail transitions. NH DOT Two Tube system with curb present. Massachusetts thriebeam, six inch spacer tube, sidewalk in front. TL3 and TL4 successful.
- Tested adhesive anchors to retrofit bridge rails by damaging a section of NJ rail, removing it, reconstructing, and impacting it with a bogie. Hilti anchors shown to be acceptable replacement tools. Retrofit designs perform similarly to original rail.
- Tested a 56-inch tall bridge railing for Hong Kong using 65000 pound British HGV.
- TTI has also looked at the occupant compartment deformation with respect to new proposed pick up requirements. TTI is not in favor of 12 inch allowable, even though NHTSA research show that severe injuries typically do not result from such deformation

Andrew Bergholtz:

TAPCO Solar powered enhanced blinker signs. Information on this traffic sign enhancement product may be found at http://www.tapconet.com/blinkerstop.html

Paul of ABT Inc.:

Slide presentation on storm water drainage and highway safety. Wet pavements lead to hydroplaning . Standing water leads to pavement deterioration. "Spread" of water from the curb into the travel lane is hazardous. He described various methods for removing surface drainage including point inlets, trench drains, inlets with trench drains.

Mauer of Nucor / Marion Steel:

Discussed improvements to cable barrier systems. How do we determine what tension to set cable to? Need to pick modulus of elasticity for the cable itself (which can be

significantly altered through post-tensioning.) then installation temperature. After 2 years both pre stretched and non-stretched wind up with the same modulus of elasticity. He has prepared chart of cable deflection vs post spacing.

Jeff Smith of Work Area Protection:

Discussed Smart Cushion crash testing. CalTrans asked them to do test 3-30 head on test with small car, offset. Occupant impact speed was 11.1 with 9.8 g's. This ridedown was the lowest recorded for this test. Angle hit with Geo Metro was ok too, 12.4 g's. Pick up head on was a TL2 test run 70 kmh. 11.5 g's The company also did a two year in-service performance. They requested customers to fill out report after every crash but only got info from earliest hits - once the contractor learned to repair device, the company didn't hear from them again. Average cost for repair parts was $39 per impact except for two catastrophic hits. 41 percent of the impacts were driveway. He also discussed a most common question they get with regards to the Smart Cushion. What happens to fluid in their cylinder in cold weather? Actually the specific gravity has most effect. Tests at different temperatures showed no effect

Paul Fossier of Louisiana DOTD:

Showed numerous photos of structure repair in Louisiana after Hurricane. Katrina. He expressed appreciation to FL DoT and TX DoT bridge engineers for their assistance in helping Louisiana DOTD to rebuild. Showed numerous photos of damaged, misaligned, and missing bridge spans and railings. The amount of damage was staggering, but the pace of the repairs has been extraordinary. He agreed to keep the Task Force up to date at future meetings.

-- End --