Task Force 13 - Fall Meeting

September 22 and 23, 2003

New Orleans, Louisiana

Co-chairman **Pat Collins** welcomed members to the "Big Easy" and thanked local Louisiana DOTD members **Kent Isreal, Paul Fossier, Bernie Hickey, and Tres Jesclard** for their efforts in hosting the Task Force in New Orleans. He then recounted, for the benefit of new members, the position of TF13 as part of the AASHTO / ARTBA / AGC Joint Committee on New Highway Materials, and that it was the longest standing (and hardest working) of the task forces. He also asked the 12 members of the AASHTO Subcommittee on Design, Task Force on Roadside Safety, who were present to remind AASHTO HQ of our good work. Collins then recognized **Bernie (Mrs. John) Durkos** for her work at the registration table, and Chairman Emeritus **Arthur Dinitz** for continuing to monitor and assist the Task Force.

Co-Chairman **John Durkos** welcomed new members who were present to participate in the Drainage Committee, which had been inactive for a few years, and **Henry Ross** of United Rentals who was also representing ATSSA. **Durkos** circulated a get-well card for **David Lewis** who is recovering from heart surgery.

Isreal added his welcome of Task Force members to his state, and expressed his wish that all would enjoy Louisiana hospitality**.**

Collins then called for approval of the minutes of the Spring 2003 meeting in College Station, Texas, which was accomplished smoothly. He also spoke to the fact that the country does not have a highway bill to replace the TEA-21 law that expires on September 30, 2003, and urged members to contact their elected representatives in Washington, DC, and remind them of how important the new legislation is to our country. Remember, however, that **Artimovich** said absolutely nothing about this.

[October update: Congress passed and the President signed a five-month extension, summarized at **http://thomas.loc.gov/cgi-bin/bdquery/z?d108:HR03087:@@@L&summ2=m&**]

Task Force Secretary **Nick Artimovich** did, however, briefly summarize the subcommittee activities from the spring meeting.

SUBCOMMITTEE SESSIONS

The task force then began its work by discussing subcommittee activity.

Nancy Berry, Co-Chair with **Matt Leahy,** was welcomed back to discuss **Subcommittee #1 – Publications.** Since money is the principal stumbling block to getting our guidance documents published, **Nancy** asked about funding under the proposed highway bills. **Collins** replied that he wrote to **Tony Kane** of AASHTO explaining the TF's need for money but had received no reply to date. **Dinitz** indicated that he had made a pitch for funding at the Joint Committee meeting, and suggested that one route might be to arrange a pooled fund study in which all states contributed money that would be used by all the Joint Committee task forces. Alternatively, the

new highway bill, whenever it finally gets enacted, may shift some money back to the FHWA for appropriate distribution which would likely include TF activities. **Dinitz** also noted that **Tommy Beatty and King Gee** of FHWA (who are key to the Joint Committee) support increased funding for TF activities.

Berry then began a discussion of the TF's proposed web site, which **Durkos** took a moment to recognize the excellent work of **John LaTurner** who put it together, and **Dean Alberson** who agreed to host the site at TTI. Before she got into details, **Berry** asked if there would be any issues regarding web site access for the disabled. **Artimovich** noted that FHWA is ruled by Section 508 of the Disability Act in this regards, and the agency is interpreting it very strictly. The TF's site would presumably be covered by the ADA, enforcement of which is much less strict, and that the TF may be able to post their documents in PDF format, but make the offer to convert documents upon request. **Collins** suggested we check with AASHTO Publications to see what accessibility issues we will actually have to face. They will also want to get some return from TF13 publications that may get posted on the website.

Berry showed the various pages of the proposed web site and handed out hard copies to the co-chairs for review in their subcommittees at this meeting. Each web page was projected and discussed. It was noted that AGC and ARTBA also ought to review this material before it gets posted.

Alberson will take the revised web pages and post them, but noted that future maintenance will be a significant factor. He will get estimates from the TTI web folks and be ready to discuss the matter at the next meeting.

Collins felt that the website may very well be the way that the TF gets AASHTO to notice us and our need for funding. He also noted that TF13 is a unique forum for industry, researchers, state, federal, and local government leaders to get together to not only contribute to standardization but to network with each other.

Subcommittee #2 – Barrier Hardware, was reported by co-chairs **Will Longstreet and Bob Takach.** Both co-chairs are relatively new to their position and opened the breakout session with a discussion of previous meetings and the current status of their subcommittee's work. They also dealt with comments to the proposed web site, metrication, and generic vs proprietary systems. They plan to use the web site to post proposed drawings and changes and to solicit feedback. The prevailing thought seems that the website will be posted in PDF format with references to the originator of the drawing if one wishes to get the information in CAD or Microstation format.

Subcommittee # 5 – Sign and Luminaire Support Hardware. Gregg Frederick noted that the subcommittee reviewed the website proposal and developed comments, including recommendations to all other subcommittees on ways to reduce redundancies, for example, to remove the list of people for whom the guides are supposed to benefit and move it to the Task Force's Organizational page, as the same groups of designers, specifiers, fabricators and researchers, etc. will need this information. Each subcommittee's page should have links to their respective publications. The question was also raised "how do people contact the appropriate TF

members to get questions answered?" It was thought unwise to include direct email links to the co-chairs, and maybe there should be a main mail box with the messages automatically forwarded to the appropriate individual.

Fredrick then discussed the subcommittee's two guides that are in various stages of updating. The Wyoming DOT is the lead state on a pooled fund study to update the Lighting Pole Hardware guide, and will be circulating the RFP to the 5-state working group. He noted that the Small Sign Support guide has been stalled as we do not yet have a common page format that the TF has agreed upon. The subcommittee asked for the Publications Committee to propose a standardized format that would be acceptable to AASHTO and the other subcommittees. **Matt Leahy** replied that we did not need to standardize line weights and other minor details but parameters for PDF/CAD/Microstation would be established and ready for discussion at the Spring 2004 meeting**. Durkos** noted that Mac Ray's final report on the Barrier Hardware Guide proposed a standard format that may very well answer these questions.

Subcommittee #3 – Bridgerail and Transition Hardware. Roger Bligh showed videos of recent transition and bridge rail crash tests, including a low cost nested w-beam TL-2 transition for connecting W-beam guardrail to concrete bridge rails on roadways with speeds less than or equal to 45 mph, and two retrofit railings for existing thru-truss bridges (one a truss-mounted TL-2 system and the other a curb-mounted TL-3 system) that not only redirected the vehicle and protected the bridge superstructure, but also preserved the historic character of the bridge. There was discussion of other recent testing conducted at TTI, MwRSF, and Caltrans related to thrie-beam transitions with and without a curb present, and the W-beam to thrie beam transition piece that is essential for thrie beam transitions from guardrail to bridge rail.

The subcommittee is closely following the work of the California / FHWA / Federal Lands project to compile a catalog of existing bridgerail designs – it was 80% complete last July and should be available for TF13 review at our spring 2004 meeting. The TF13 bridge rail guide will include similar information to that be included in the catalog, including the name and type of rail, digital photo, a drawing with important dimensions (e.g., rail height), and acceptance criteria. The transition guide would follow a similar format. Information on bridge rails and transitions currently contained in the “Guide to Standardized Highway Barrier Hardware” will be reformatted and included in the new guide. A suggestion was made to include information regarding bridge rail types that a transition can be attached to other than the system used in the crash testing. The subcommittee discussed the format for electronic drawings and, like everyone else, reached no consensus. Finally, they discussed comments to the proposed website.

Subcommittee #6 – Work Zones. Paul Fossier reported that the subcommittee provided comments on the National Work Zone Safety Information Clearinghouse to Dr. Ullman who will incorporate them as funding permits. (The subcommittee will not pursue a separate publication as the Clearinghouse serves as contact point for WZ safety hardware information.) Comments on the draft web site to be provided to Berry include a revised statement of work and a request for a link to the NWZSIC. The subcommittee also discussed the application of portable concrete barrier units when used in locations where expected impact angles are less than TL-3. (If angles are less, then the anticipated deflections will be reduced.) Finally, the subcommittee discussed the ATSSA proposal to permit the use of a voluntary system of marking NCHRP Report 350

compliant work zone Category 2 and Category 3 devices. The subcommittee voted to endorse the ATSSA positions. **Collins** stated that the Executive Board would discuss the matter.

Subcommittee # 7 – Certification of Test Facilities. Ron Faller briefly reviewed the history of inter-laboratory comparisons that he had coordinated and noted that he would appreciate it if other labs would be the contact point for the upcoming rounds. National Crash Analysis Center (NCAC), Transportation Research Center (TRC), and the Texas Transportation Institute (TTI) all agreed to help continue the inter-laboratory comparison studies on occupant risk determination (NCAC & TRC) and film analysis (TTI). All test laboratories were asked to consider and volunteer to conduct ILC's on other topics to be determined. It was agreed that information on all the labs participating in the ILC's should be posted on a MwRSF sponsored website. The website that contains an archive for all of the Subcommittee No. 7 activities may be accessed by following this procedure:

1. Cut and paste this link into your internet browser: ftp://mwrsf.unl.edu/
2. You will receive an impertinent ERROR message, click on "OK"
3. Go to the top of your internet browser page and click on "File"
4. Click on "Login As"
5. Enter the user name "AASHTO" and the password "mwrsf"

LaTurner and Jeff Shewmaker recounted their experiences with laboratory accreditation. **Harry Taylor** then discussed the FHWA proposal to require laboratory accreditation for test houses that crash test devices for FHWA acceptance. Once this proposal is finalized labs will have two years to achieve accreditation.

The NCHRP Report 350 update process is underway and TaskForce 13 input is solicited, but if you want to comment you'd better hurry as Dean Sicking has to finalize his findings sooner or later.

Subcommittee # 8 – Rail Highway Crossings. Dean Alberson noted that they provided comments to Berry for the website. They also added FRA and FHWA contacts to their brochure, plus the Canadian railroads. That will be posted to the website and updated as needed. LADOTD asked if there was a crossing gate available for more than two lanes (answer was affirmative.) The Port Authority of NYNJ wanted to know if there was a gate strong enough to capture trucks (affirmative.) The subcommittee also wordsmithed their mission statement. They hope to participate in TRB this January, and intend to invite FRA's Brian Gilleran to a future TF-13 meeting.

Subcommittee # 4 – Drainage. Durkos reported for the newly-resurrected subcommittee, which last published their guide in 1999 and has been dormant sine. The Task Force reached out to 8 or 9 different companies, with a number expressing interest, however only 1 of those companies sent a representative, **Rick Foster** of ABT, Inc. **Foster** was bestowed with the chairmanship of the subcommittee, and asked to prepare a mission statement for inclusion on the website. The subcommittee noted that the 1999 guide was ready for updating as subsurface drains were not represented in the guide.

Special Subcommittees. The Marketing Subcommittee did not report any new developments, although the imprinted yellow folders given to all participants were recognized as a nice benefit. New Standardization topics mentioned were Poles on Barriers, and Signs on Bridges, though no further action was taken on those.

The meeting adjourned at approximately 4:15 pm.

Executive Committee Meeting, Monday, September 22

The Task Force 13 Executive Committee, consisting of the TF Co-Chairs, Secretary, and subcommittee Co-Chairs, meet at 4:30. Present were **Collins, Durkos, Artimovich, Berry, Bullard, Leahy, Frederic, Mauer, Stenko, LaTurner, Fossier, Longstreet, Tackach, Faller, Alberson, Bligh, Artar, Dinitz, Foster, Taylor, David Little and Keith Cota. Collins** thanked all the subcommittee chairs and offered whatever assistance the Task Force could do to help move their guides towards publication. He also noted that he followed up on that letter he sent to Tony Kane of AASHTO regarding funding with a phone call that day. Kane indicated that Jim McDonald is AASHTO's representative to our meetings and is the contact person the TF should work through. Kane needs to know that our website is ready for launch and we need AASHTO's input. **LaTurner** suggested that the TF13 website be posted and see how AASHTO reacts to it, however **Collins** preferred that the TF take the direct approach. **Dinitz** offered to host the website once all the TF's have reported in with their minutes. **Collins** reiterated that, although designers need a hard copy of the report, electronic format is the way to distribute these documents. **Bullard** indicated that TTI might be interested in hosting the site and he will investigate if it can be done for free (as is done for some other organization), or on a fee basis (he also agreed to get estimated costs for website maintenance from the TTI IT people.) **Berry** asked if another subcommittee was needed to approach AASHTO with our website proposal. Then the suggestion was made that the "generic" devices in our documents might be supported by AASHTO free of charge, but that the proprietary devices could be paid for by subdividing the costs equally among the private sector members of the Task Force.

The Board then discussed proposals for the Spring 2004 meeting. Candidates were Sarasota FL, Chicago IL, Virginia City NV, Savannah GA, and Washington DC. The Board elected to accept the invitation offered by **Bud Zaouk** of the George Washington University – National Crash Analysis Center to host the meeting in Washington DC at the University's facilities. The proposed dates are April 22 and 23, 2004. For more information on GWU's NCAC see http://www.ncac.gwu.edu/

The Board then discussed the ATSSA proposal recommending that crashworthy Category 2 and Category 3 work zone traffic control devices bear a label that states "NCHRP Report 350 Compliant" and displays the FHWA "WZ" number that was assigned. This label, whether embossed, stuck on, riveted, whatever, would facilitate inspection of devices in the field. The Board agreed that this was appropriate for Category 2 devices, but did not support the suggestion to apply such a label to Category 3 devices.

Berry was asked to report back to the Task Force in April on standardizing the website pages, document formats, etc. Finally, the question was raised if AASHTO can send a high-level

representative to participate in the TF-13 half of these annual joint meetings between TF-13 and TFRS?

Tuesday, September 23, 2003.

Chuck Neissner of NCHRP brought us up-to-date on the following roadside safety related projects. Those of you viewing the electronic version of these minutes should be able to click on the project number below and be linked directly to the NCHRP page describing the project. Otherwise you may go to http://www4.trb.org/trb/crp.nsf and look for NCHRP.

Project #	Project Title
16-04	Design Guidelines for Safe and Aesthetic Roadside Treatments in Urban Areas (Active)
17-10(2)	Structural Supports for Highway Signs, Luminaires, and Traffic Signals (Active)
17-11	Determination of Safe/Cost Effective Roadside Slopes and Associated Clear Distances (Active)
17-14(02)	Improved Guidelines for Median Safety (Active)
17-22	Identification of Vehicular Impact Conditions Associated with Serious Ran-Off-Road Crashes (Active)
17-24	Use of Event Data Recorder (EDR) Technology for Roadside Crash Data Analysis (Active)
22-09	Improved Procedures for Cost-Effectiveness Analysis of Roadside Safety Features (Completed)
22-12(02)	Guidelines for the Selection, Installation, and Maintenance of Highway-Safety Features (Completed)
22-13	Performance of Roadside Barriers (Completed)
22-13(2)	Expansion and Analysis of In-Service Barrier Performance Data and Planning for Establishment of a Database (Completed)
22-14(02)	Improved Procedures for Safety-Performance Evaluation of Roadside Features (Active)
22-15	Improving the Compatibility of Vehicles and Roadside Safety Hardware (Completed)
22-17	Recommended Guidelines for Curbs and Curb-Barrier Combinations (Active)
22-18	Crashworthy Work-Zone Traffic Control Devices (Active)
22-19	Aesthetic Concrete Barrier and Bridge Rail Designs (Active)
22-20	Development of AASHTO LRFD Design Methodology and Load Transfer Mechanism for MSE Walls with Top-Mounted Traffic Barrier/Anchor Slab Under Vehicular Impact Load (Anticipated)

Affiliated Organizations

Donna Clark brought us up to date on numerous issues that ATSSA (American Traffic Safety Services Association) is dealing with, such as the Guardrail Installers Training Course and their new Longitudinal Barrier Training Course – Selection and Application of Longitudinal Barrier Systems. Their Guardrail Inspection Checklist is at the printer and will be available soon. ATSSA's annual Convention and Traffic Expo will be held in San Antonio, TX, on February 1-3, 2004, and National Work Zone Safety Week is scheduled for April 4-10. The Memorial Wall continues to be scheduled for exhibition around the country, and ATSSA has developed a Traffic Violator Awareness Program for people cited for a moving violation in a work zone. And since increased funding for safety improvements can benefit those who own and maintain our highways, ATSSA supports the safety funding bill HR 288 (see http://www.atssa.com/govrel/hr2882.htm for links to this bill and other ATSSA web pages.)

Harry Taylor discussed FHWA's latest proposal for dealing with requests for NCHRP Report 350 acceptance where the applicant is basing the determination of crashworthiness on similarity of their product to one that has been crash tested by others. A copy of the latest draft of this proposal is appended to these minutes. The following comments were received from the membership:

Whether a product is patented or not, **Dave Hubble** maintains that he has some exclusive rights to a product for which he has paid for the crash testing – if patent law doesn't apply then copyright protection might. **Paul Lang** noted that the policy ought to consider Patent Pending products in the same way as patented products.

Henry Ross of ATSSA presented the NCRHP Report 350 product labeling proposal discussed earlier in these minutes. The full task force voted to endorse the proposal for Category 2 Work Zone devices as recommended by the executive committee.

Terrel Temple of NACE briefed us on the organization and goals of the National Association of County Engineers (http://www.countyengineers.org/), an affiliate of the National Association of Counties (http://www.naco.org/) The stated aims of NACE are to Speak, Learn, Deal with common problems, and Present a message. There are 3066 counties in the USA and 2400 have roadway responsibilities. NACE has a rural road safety program and supports additional funding for local, rural road and bridge construction. They also favor the relaxation of environmental restriction on local roads vs the depth of review required for a project on the Interstate system.

Don Ivey of Scientific Inquiry, Inc. gave us a progress report on his work with utilities, particularly the State of the Art Report by TRB A2A07 – Utilities, which is expected to be published by January, 2004. Much of the material was discussed at the TRB session in January, 2000 and was included in the Transportation Research Circular EC030 available on line at: http://gulliver.trb.org/publications/circulars/ec030/ec030.pdf **Dinitz** voiced his support of Don's efforts to reduce the toll of utility pole crashes.

Gregg Fredrick summarized the meetings of the AASHTO Bridge Subcommittee in Albuquerque. The 17th edition of the AASHTO Bridge Specs will be the end of the line for this

publication. It will be replaced by the LRFD – Load and Resistance Factor Design specifications (which in itself is destined for many changes over the next few years.)

Technical Committee T-7 on bridge railings discussed bike rail heights and recommended to keep the current 54 inch height requirement, even though there are crash tested railings (which are intended to accommodate bicyclists) that are lower. They also discussed bike rails and other additions to parapets like fencing, noise walls, etc. Finally they discussed California FHWA's work on a compilation of bridge rail designs and photos.

Technical Committee T-11 on bridge research emphasized designing structures using the new LRFD specifications.

Technical Committee T-12 on Sign and Luminaire supports is working on specification changes recognizing the LRFD design methods especially with respect to fatigue resistance.

TECHNICAL PRESENTATIONS

Jim Kennedy of Battelle Labs discussed the advantages of using the expertise of the Centers of Excellence that have been established by the FHWA in the development of highway safety hardware. Battelle has a 3 year contract with FHWA to develop and promote Finite Element Modeling to highway agencies and the private sector. Although Jim noted that FEM is not always necessary, it can often be very useful in cutting the cost of full scale testing.
Dean Alberson of TTI showed video of numerous recent testing efforts. The Florida DOT Jersey Barriers did not meet the LRFD specifications, but may meet the performance specs. The modified Kansas Corral bridgerail had an inadequate post set-back, however it was installed with a curb and it appeared to have little potential for snagging when compared to similar crash tested rails. Crash testing was also done to investigate deck edge thickness issues. A new bridgerail was designed for the Tacoma Narrows bridge. The new TX Dot portable concrete barrier was tested, as were strong guardrail posts to get a better handle on how they behave, especially with a paved surface surrounding them to reduce maintenance.

Paul Lang of Lang Products International showed the many ways that some contractors use to artificially extend the "normal service life" of a non-crash-tested work zone traffic control devices, even to the extend of salvaging one bolt and incorporating that bolt into a new device of the same untested design. Paul requested that the guidance be updated to specify how much damage could be done to a device and still allow it to be fixed and redeployed, or by setting a sunset date by which all new projects must incorporate 350 hardware and by which state forces and utility companies must update their stocks. **Ross** concurred with Lang's analysis and supported additional guidance on replacing obsolete hardware. **Durkos** asked **Fossier's Subcommittee #6** to look into the issue and recommend appropriate action.

Ron Faller of the Midwest Roadside Safety Facility showed additional testing of concrete barriers with poles mounted atop them, a TL-5 test of the Nebraska Aesthetic bridge railing, and a race car test on the "SAFER" barrier for use along auto race tracks.

Charles Boyd of the Florida DOT discussed the Four Rail Florida Bridgerail, expressing concern the state has with the structural capacity of existing 32 inch tall parapets.

Bud Zaouk of the George Washington University National Crash Analysis Center discussed the current capabilities of the FOIL – Federal Outdoor Impact Laboratory and the plans to move it out to the GWU Virginia Campus. The FOIL is used, and will be used for research purposes and not for compliance testing. He also showed films of some recent tests conducted at the FOIL including auto and truck tests into concrete barriers to validate Finite Element Models.

John Durkos of Road Systems Inc. presented the BEAT – Single Sided Crash Cushion which uses posts bolted to steel angles which in turn are bolted to the pavements. The system was crash tested as a transition from a box beam barrier to a concrete parapet.

David Hubble discussed the problem of fatigue cracks in the welds that support poles and mast arms for luminaires and traffic signals. The Mast Cast line of products are designed to replace these welded joints in aluminum ancillary structures.

JOINT TASK FORCE 13 – TASK FORCE FOR ROADSIDE SAFETY WORKSHOP

The principal topic selected for the joint discussion between TF-13 and the AASHTO TFRS was "in-service evaluation of safety hardware." Mac Ray had completed an NCHRP study on this topic, and TRB proposed a clearinghouse on in-service performance evaluations. **Durkos** gave a PowerPoint presentation on in-service evaluations (ISE) as outlined in Report 350. He noted that manufacturers of proprietary devices have an interest in how their products perform, and design changes are made based on these observations. However, the manufacturer doesn't have enough people to observe a lot of crash sites, and maintenance forces often affect repairs before the site can be inspected.

Little noted that Mac Ray was at the University of Iowa when he did the ISE of BCTs and MELTs in Iowa, Connecticut, and North Carolina. Ray tried to rate quality of installation to the crash severity and did see severity increases with worsening installation conditions. Subsequent to that study State staffing has gotten tighter and personnel are not available to continue with follow up. In the observations **Little** has been able to make from his position in a State DOT District Office he sees a number of guardrail ruptures. Many states see W-beam as a marginal system as it is currently configured.

Powers mentioned his 1986 study on ISE of the self-restoring barrier and a variety of crash cushions. During one night inspection trip earlier this year in Minnesota it was difficult to determine just what the pre-existing conditions were.

Durkos noted that some states will be installing the new MWRSF guardrail. (Iowa yes, esp. when transitions, terminals, and means to reduce deflection are developed. Kansas also has plans to change over but only after the transitions and terminals are accepted.) MWRSF will be watching over the new installations even though end terminals and transitions have not been fully developed. A general discussion of the plusses and minuses of changing the strong-post W-beam design vs rail thickness vs rail height vs splice location vs blockout dimensions ensued. **Bligh** questioned whether all the modifications that MWRSF made to w-beam GR were necessary, perhaps just moving the splice will accomplish the bulk of the intended improvement.

(**Faller**, who was involved in the development of the new system, was not present at this discussion.)

After the afternoon break, **Durkos** asked how are the states dealing with temporary CMB? Kansas reported they use all F shape. Missouri transitioned to F shape in order to comply with the Innovative Median Barrier requirement. Virginia is also all F shape. Louisiana uses F for permanent barriers and is switching to F for portable segments also. **Albin** noted that Washington State is satisfied with the NJ shape. He conducted a comparison of concrete barriers to w-beam barrier and saw that both of those systems were better than cast-in-place. Utah retains the NJ shape, but has a standard drawing for the single-slope barrier. New Hampshire changed to F in the late 90's but allowed the NJ shape for a while. Ontario uses F for temporary barriers but continues to use the Ontario Tall Wall. They have had some punch-outs when struck by large trucks. Delaware has used F in permanent barriers since '98 and is still transitioning to F with temporary barriers. South Dakota calls for F but allows temp. NJ to remain in use; all bridges use NJ. Mississippi specifies 42 inch NJ but will allow F. Alabama uses NJ for portable and permanent, but have used some single-slope barrier. Wyoming doesn't use much CMB as their bridge rails are the two-tube design. TranspoIndustries noted that there is no consistency in the shape of tunnel liner barriers they build, all shapes are used.

Durkos recounted how the State of Ohio collected excellent data on the ET-2000 once it was deployed, but we don't expect to see that level of interest in the future except through NCHRP projects.

Little noted that safety hardware really needs a champion to promote evaluation. In Iowa, he discovered the loops at the ends of their temporary concrete barrier segments were brittle in winter and lead to the barrier separating upon impact.

Dinitz referred to an early crash cushion project where the installations were closely monitored. There were 100 impacts with no fatalities. He suggested AASHTO be asked to set up a program like NTPEP (http://www.ntpep.org/programs/ntpep/home.nsf/Home) to evaluate classes of safey hardware. A more formal approach of this sort is warranted. **LaTurner** noted that NTPEP is funded by the manufacturers, but Dinitz supports FHWA and AASHTO funding.

Berry pointed out that before any evaluation program is begun a state needs to have a good inventory of just what it has out there. Existing inventories lump dissimilar devices in broad categories based on similar functions. A detailed inventory is really needed to be able to discriminate based on performance and site characteristics.

LaTurner said he would look into Energy Absorption's hardware hit monitoring system and see if that might be a venue for gathering useful performance data.

Pat McDaniel said Missouri has gone to performance specifications. A guardrail installer would be required to be certified. End terminal manufacturers need to make sure their installers know how to put this stuff out there. If guardrail maintenance is done by contract, then the contractor ought to be required to provide an ISE report. Missouri inspectors don't have the experience they used to. **Durkos** noted Indiana is also requiring certification – at least 1 card-carrying

member must be on a job. **Berry** said that Virginia DOT required guardrail accreditation training. However, even some of the installers who have taken the training have done poorly.

[On October 21, Pat McDaniel sent the following correction: Nick, it was brought to my attention that the Fall TF 13 minutes were in error in what I stated about performance specifications in Missouri on guardrail. At the meeting, I used guardrail as an illustration of how end result specifications could apply in the acceptance of guardrail in place since everything had to be certified to meet NCHRP 350, with the exception of having certified contractors. In that illustration, I raised the question to end terminal/crash cushion manufacturers if they would be willing to certify contractors as qualified to install their terminals. This is the direction we would like to go, but currently we still inspect guardrail as it is being installed. Missouri is adopting performance specifications where possible, but method specifications still exist.]

Little wrapped up the discussion saying that Iowa went to the F shape to provide a little reserve capacity over conventional barriers. The lower slope break point of the F shape isn't quite as critical when you are slipforming. However, it is difficult to keep the machine down on the pavement when the concrete is added. When forming the NJ shape the machine rides up and produces a lower vertical face that is 4-5 inches high, significantly altering the profile and barrier performance. Likewise, their new guardrail spec allows initial installation heights of 27 to 31 inches.

Meeting adjourned.

In the AASHTO Task Force on Roadside Safety meeting held on September 24-26 it was decided that their next fall meeting would be at the National Academy's Beckman Center in Irvine, California. The exact dates will be determined later, but will likely be in late September. Task Force 13 has accepted the invitation to hold our meeting at the Beckman Center as well.

Draft
Procedures for FHWA Acceptance of Roadside Safety Hardware involving Product Equivalency

As the number and variety of roadside safety devices increases, questions have arisen concerning FHWA procedures for accepting additional products based on the assertion that these new products are equivalent to devices previously determined to be crashworthy. This document provides an FHWA procedure for the acceptance of roadside safety hardware similar to (or identical to) hardware that has already been accepted for use on the National Highway System (NHS).

This procedure addresses the following three scenarios:

I. The applicant has not conducted crash testing of their product, but asserts that the product is equivalent to a previously accepted generic product.
II. The applicant has not conducted crash testing of their product, but asserts that the product is equivalent to a previously accepted proprietary product.
III. The applicant has conducted crash testing, but the tested product may be similar to another manufacturer/vendor's product.

Based on our experience with this issue, FHWA will review requests for acceptance of roadside safety hardware based on equivalency as follows:

I. Requests based only on an assertion of equivalence to a generic product:

If a generic (non-proprietary) product has been accepted for use on the NHS based on testing, the FHWA will not issue a separate acceptance letter to any applicant using the same device. An applicant may certify that their product is identical (within normal commercial manufacturing / fabrication tolerances) to the device that was accepted as a crashworthy product by the FHWA, i.e., the product can be self-certified. If not identical, then any differences between the tested product and the applicant's product must be identified (color of paint or type of retro-reflective sheeting are exempt), and the effect that these differences will have on the crashworthiness of the device must be explained. If the differences are likely to have a significant effect they must be addressed. (See note 2.) If the applicant wants a letter of acceptance from FHWA they must follow the procedures in note 2 and FHWA will review the application as in scenario III below.

II. Requests based only on an assertion of equivalence to a proprietary product.

If the applicant is requesting an acceptance letter based on equivalence with a proprietary roadside safety feature previously accepted by FHWA, the *submitter must include the certification listed below before FHWA will review the submission*.

Certification

A notarized statement indicating that, with respect to the device for which the applicant is seeking an FHWA Acceptance Letter, one of the following is true: (1) the applicant holds the patent, (2) or the patent on the original device has expired and will not be infringed by the manufacture, use, or sale of the candidate device.

Also, an applicant must certify that their product is identical (within normal commercial manufacturing / fabrication tolerances) to the device that was accepted as a crashworthy product by the FHWA, i.e. if not identical, then any differences between the tested product and the applicant's product must also be listed in detail (color of paint or type of retro-reflective sheeting are exempt), and the effect that these differences will have on the crashworthiness of the device must be explained. FHWA is likely to require tests/analysis to confirm that the device is identical in performance. If the differences may have a significant effect they must be addressed. (See note 2). If tested, FHWA will review the application as in scenario III below.

III. Requests based on crash testing paid for by the applicant.

In most cases, these submissions will be for new devices that are designed by the applicant and are unique. The applicant may have a patent, patent pending, or intend to apply for a patent. However, in rare cases, the new product may be so similar to a proprietary device that the question of patent infringement arises. In order to address this scenario, our acceptance letters for all devices, whether FHWA is aware of any potential patent conflicts or not, will contain the following disclaimer:

"This Acceptance Letter shall not be construed as authorization or consent by the Federal Highway Administration to use, manufacture, or sell any proprietary device for which the applicant is not the patent owner. The Acceptance Letter is limited to the crashworthiness characteristics of the candidate device, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant."

FHWA also may require an applicant to provide the certification as noted above for Scenario II even though a feature has been crash tested.

Additional notes that apply to applications:

1. In addition, the FHWA reserves the right to inform any original patent holder of a submission based on equivalence to a previously accepted product and may withdraw an acceptance letter if an applicant's submission is later shown to misrepresent the issue, either intentionally or unintentionally, or contains errors of fact or omission.

2. For each submittal, the applicant must present evidence that the device meets NCHRP Report 350 (or subsequent crash test guidance) evaluation criteria. This evidence may be based on successful completion of all of the recommended tests, of some of the recommended crash tests

(in which case a waiver of specific tests must be requested and justified), or on engineering analysis or other physical testing as deemed appropriate. (An applicant is encouraged to discuss with FHWA the testing/analysis required before undertaking a testing program.)

3. Because of the difference in complexity and experience with different products, the level of effort needed to evaluate each class of device may differ. FHWA will review each application on a case-by-case basis and reserves the right to request additional information in some cases before issuing an acceptance letter.