# SECTION 305 TECH SUB COMM

MINUTES APRIL 22, 2010 8:00AM – 6:00PM MEETING

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| **FACILITATOR** | *Mario Bergeron, CMO Amtrak and 305 Technical Subcommittee Chair* |
| **ATTENDEES** | *Mario Bergeron, Dale Engelhardt, Ken Uznanski, Rob Edgcumbe, Kevin Kesler, Eloy Martinez, Charles Bielitz, Jeff Gordon, Michael Coltman, Brian Marquis, Steve Fretwell, Bob Haslam, Allan Paul, Charles Poltenson, Andrew Wood, Tammy Nicholson, Leonard Evans, John Tunna, Shayne Gill, Steve Hewitt, Dharm Guruswamy, Stan Hunter, Curtis McDowell, George Weber, Tom McOwens, Don Damron, David Ewing, (Bill Bronte, Rod Massman – Executive Board officers) -(Note: also attending the general session and breakout subgroup sessions were 100+ members of the industry)* |
| **ABSENTEES** | *Tammy Krause, Gil Wilson, Gary Fairbanks, John Oimoen, Kevin Lawson, Jack Madden* |

## DECISIONS MADE

It was agreed that the Technical Subcommittee will dispense with the weekly conference calls for now in order to allow time for the seven subgroups to meet via conference calls on a regular (recommended weekly) basis and to report their progress at two calls of the Tech subcommittee to be held May 6th and May 20th. It was also decided that the subcommittee conference calls would include participation of the industry members who are participating on the subcommittee and/or subgroups. These calls will be focused on hearing from each of the subgroup leaders and will prepare the Chair to report progress to the Executive Board at the next meeting of that body, scheduled for May 26th, Washington, DC (Note; upon suggestion that subgroup leaders be invited to attend the May 26th Executive Board meeting – it was decided that the leaders should pencil the date in and be prepared – possibly to attend in person or by conference call – Mario will provide the Board with the report of the subgroups)

It was also agreed that the technical subcommittee, following the May 20th conference call, will then resume a conference call schedule of one call every three weeks; again, allowing more time for the subgroups to continue to hold regular calls and progress their work efforts culminating with recommendations on the first set of specs (bi-level) being submitted to Dale Engelhardt by June 16th.

It was agreed that the core (voting members) technical subcommittee members would meet in person in Chicago on June 16th (all day) and June 17th (half a day) to review and finalize the recommendations submitted/presented by the subgroups.

It was agreed that all presentations given during the meeting (April 22nd) would be posted on the AASHTO website at www.highspeed-rail.org as soon as practicable after the meeting.

## Action Items Update (New and Current)

State DOT responses, comments, exceptions, to the Clearance Diagrams and Platform Heights requirements, previously distributed to all core subcommittee members, by Dale Engelhardt, have been submitted and a list of those responses have been distributed to tech subcommittee core members.

States who are not committee members/participants were polled via the AASHTO States survey (already an action item of the 305 Executive Board). The survey has been completed and a matrix of the responses was developed by Andrew Wood and distributed to all tech subcommittee core members for their review. As per the Executive Board request (March 10) David Ewing, consultant to AASHTO, will prepare a background, context and analysis of the responses for submission to the Executive Board by the May 26th meeting of that body.

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| Background; context; concerns; expectations; overviews; were presented at the opening and closing general sessions of the meeting. Presentation speakers included; Tech Subcommittee Chair, Mario Bergeron, Amtrak; S305 Executive Board Chair, Bill Bronte, Caltrans; Kevin Kesler, FRA member of the S305 Executive Board, Bob Lauby, FRA (for Jo Strang); Eloy Martinez, FRA representative on the S305 Technical subcommittee; and Dale Engelhardt, Amtrak, Vice Chair of the Technical Subcommittee. All presentations are to be posted on the AASHTO website as soon as practicable. The website address is: www.highspeed-rail.org. |
| All seven subgroups (Locomotive, Cars, Mechanical, Structural, Interiors, VTI, and Electrical) met in breakout sessions during the meeting; constituted themselves, formulated responses to the questions prepared in advance of the meeting; and began to develop a plan of action and a schedule for regular conference call meetings for their specific groups to conduct their business. The subgroup teams will submit recommendations to the tech subcommittee by June 16, 2010. (Subgroup team leaders will present their recommendations at the June 16-17th meeting in Chicago). |
| Each subgroup leader - Steve Fretwell – Locomotive; Ken Uznanski – Cars; Jeff Gordon – Mechanical; Eloy Martinez – Structural; Andrew Wood – Interiors; John Tunna-VTI; and Greg Gagarin (for Tammy Krause) – Electrical -gave a brief report to the meeting attendees in a general session at the conclusion of the break out sessions. The subgroup leaders will provide a written summary report (**attached**) of their session to Steve Hewitt by COB April 27, 2010. Steve will include the reports as attachments to the meeting minutes and for posting on the AASHTO website. To be included in each subgroup report is: a list of the members of the subgroup; decisions; action items; questions; conclusions; and recommendations. Steve will send out a notice to all subgroup leaders by COB Friday, April 23, reminding them of the due date for their report, and reiterating the items to be included. |
| Each of the subgroup leaders have been asked to prepare a Work Plan and submit to Dale Engelhardt by COB on April 30th with a CC to Steve Hewitt. Subgroups are asked to use the Microsoft Project Mate program. |
| It was generally agreed that the Buy American issue would be best served/managed/coordinated through the Cars subgroup with input coming from the other subgroups. The Cars subgroup will provide a " current situation statement" – "'where we are today – and where we think we can get to"; and will submit this statement to the tech subcommittee core team - which will determine next steps and action recommendations for consideration of the S305 Executive Board. |
| Steve Hewitt will update the industry participation list and subgroup members lists (**attached**) for distribution/web posting and all will be invited to participate on the technical subcommittee conference calls (see above) – currently planned for May 6th and May 20th and subsequently to be held every three (3) weeks |
| The CALTRANs specs (C21) were received in CD form and distributed by Dale to his staff and to Kevin Kesler for review. Chris Heald, Interfleet, inc., developed a drop box and posted the C 21 specs to it. Access to the drop box is available to all core and industry members of the subcommittee. AASHTO webmasters are preparing the information for posting on its website – anticipated to be posted by April 30th. |
| As agreed to on the call of April 15th, a guidance document regarding standardization and mudularization was prepared and distributed to the core members of the tech subcommittee. . |
| Voting procedures have been developed and distributed to subcommittee leadership. The procedures were developed consistent with those of the Executive Board. The next step is to get consensus agreement from the core subcommittee members. |
| The general session of the technical subcommittee meeting ended at approximately 4:30pm and the core member wrap up session adjourned at approximately 6;00pm |
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| **ATTACHEMENTS** |
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**PRIIA 305**
**Technical Sub Committee**
**April 22, 2010 Chicago**
**Agenda**

State of Illinois: James R. Thompson Center
Main Auditorium – Lower Level
(Across from Food Court)
100 West Randolph Street
Chicago, IL 60601

***Voting Members of Technical Sub Committee will Meet from 8:00 Am to 9:00 Am for Committee discussions and Reviews***

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|---|---|
| 8:00-8:15 am | Mario Bergeron -Welcoming comments,<br>Introduction of Tech Sub Committee members<br>Objectives for Today's Meeting<br>Technical Teams Objectives<br>Introduction of Bill Bronte |
| 8:15-8:25am | Bill Bronte -Welcoming comments<br>Summary of PRIIA Executive Activities<br>Expectations for Technical Sub Committee Performance |
| 8:25-8:35 am | Kevin Kessler - FRA<br>Tech Sub Committee Budget Review |
| 8:35-8:50 am | Group Discussions |

***Technical Sub Committee Meeting with Manufacturers Representatives***

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|---|---|
| 9:00-9:10 am | Mario Bergeron-Welcoming comments,<br>Agenda and Objectives for Today's Meeting<br>Introduction of Bill Bronte |
| 9:10-9:20am | Bill Bronte-Welcoming Comments<br>Overview of PRIIA 305 Executive Committee Objectives<br>Facilitate Domestic Manufacturing and Job Creation |
| 9:20 -9:30 am | Mario Bergeron<br>Technical Sub Committee Objectives<br>Standardized, modular rail vehicle specifications |
| 9:30-9:50am | Kevin Kesler-FRA Requirements and Expectations for Supplier Involvement<br>Integrate US Rail Supplier Technologies |
| 9:50-10:05am | Dale Engelhardt-Technical Sub Committee Goals |

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| | Project Milestone Review with Status Report |
| 10:05-10:20 am | Break |
| 10:20-10:50 am | Jo Strang-RSAC Development for Equivalent Standards RSAC team results |
| 10:50-11:10am | Dale Engelhardt-Define Product Focus Teams<br>Define Team Objectives<br>Organize Manufacturing Representatives into Teams |
| | TEAMs |
| | Car Manufacturer<br>Locomotive Manufacturer<br>Mechanical<br>Electrical<br>Structural<br>VTI –Trucks and Bogies<br>Interior Configuration Layout and Design Group |
| 11:10-12:00 pm | Team Break Out Sessions |
| 12:00 -12:30 pm | Lunch |
| 12:30-3:00 pm | Break Out Session Resume |
| 3:00-3:15 pm | Break |
| 3:15-4:45 pm | Break-Out Team Presentations<br>10 Minutes Max |
| 4:45-5:00 pm | Mario Bergeron –Closing Comments |

***Voting Members of Technical Sub Committee will Meet from 5:00 PM – 6:00 PM for Committee discussions and Reviews***

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|---|---|
| 5:00 PM-6:00 PM | Technical team review of meeting results |

# Reports of the S305 Technical Subcommittee Subgroups

# April 22, 2010, Chicago Illinois

## Report of the VTI Subgroup:

## Present

| | | | Office | Mobile |
|---|---|---|---|---|
| John Tunna | AAR | john_tunna@aar.com | 719 585 7199 | 719 248 6774 |
| Brian Marquis | Volpe | brian.marquis@dot.gov | 617-494-2922 | 617-494-3616 |
| Curtis McDowell | NCDOT | cmcdowell@mc-tech.net | 919 715 5753 | 919 696 3873 |
| Ken Takeda | Kawasaki Rail Car | takeda@kawasakirailcar.com | 914 3764700 | 914 671 2817 |
| Nathan Heisler | BRADKEN | nheisler@bradken.com | 281 232 8490 | 913 638 0882 |
| Deep Satsangi | BRADKEN | dsatsangi@bradken.com | 913 367 2121 | |
| Wolf Reimann | BRADKEN | wreimann@bradken.com | 913 367 2121 | 816 308 9948 |
| Nicolas Lessard | Bombardier | nicolas.lessard@ca.transport.bombardier.com | 450 441 3003 | |
| Tom McOwen | Ohio Rail Development Commission | rail@fuse.net | 513 703 8055 | |
| Richard Vadnal | Nippon Sharyo | vadnal@nipponsharyo.com | 847 228 2700 | 847 830 5231 |
| Rodney McGhee | Timken | rodney.mcghee@timken.com | 734 812 6137 | |
| Dan Blasko | Timken | daniel.blasko@timken.com | 330 471 2347 | |

Discussions

Scope of VTI Team

IN - Trucks, wheelsets, suspension (secondary and primary), truck-carbody connection (requiring interface with Structural Team)

OUT - brake systems, wheel slip systems, etc. (requiring interface with the Mechanical Team over attachments for these).

CALTRANS C21 Specification

It was agreed that, due to the short timescales, the CALTRANS C21 specification for the 3rd generation bi-level Surfliner would be used as a starting point for the Section 305 Next Generation Corridor Equipment bi-level specification. The team will recommend the parts of the C21 specification that are suitable for the more general specification. It will also recommend parts that should be made less specific.

Requirements

The following requirements related to vehicle-track interaction were identified:

| **Safety** | **Performance*** |
|---|---|
| Wheel load equalization (APTA) | Max. Speed 125 mph |
| VTI in 49 CFR 217 (FRA), track classes 1 through 7 apply | Max. Superelevation 7 inch |
| VTI in 49 CFR 238 (FRA) including truck to carbody connection strength | Max. Cant Deficiency 5 inch |
| Clearance envelopes (Amtrak) | Min. Curve Radius 250 feet (~23 degrees) |
| Platform heights (ADA) | Ride quality<br>ISO 2631 ?<br>CATRANS Spec. 5-102, Ch. 19 ?<br>CALTRANS Spec. 1-106, Ch. 8.3 ? |
| | Reliability, Availability and Maintainability |
| | Stability (free from axle, truck and carbody hunting) |
| | Curving in moderate degree curves |
| | Fatigue life |
| | Max. dynamic (P2) force |
| | Strength (e.g. must support the car weight) |
| | Mass |
| | Inertias |

* One of the team's tasks is to specify several of these performance requirements.

Buy America

The team agreed that some suppliers could almost meet a 100% buy America requirement, and some who could not currently meet it would be prepared to do so if there is sufficient demand to justify the required investment.

Intellectual Property

The concept of purchasing a supplier's IP to enable other suppliers to copy the design was not considered by the team to be a practical proposition.

CandidateS for Standardization

The following were considered by the team to be candidates suitable for standardization:

**Items Considered Suitable for Standardization**

| **Item** | **Value** |
|---|---|
| Trucks per car | 2 (thereby excluding articulated cars) |
| Axles per truck | 2 |
| Axle spacing | 102 inch +/- tbd inch |
| Axle properties<br>Size<br>Material | <br>tbd<br>tbd |
| Bearing arrangement | Outboard |
| Bearing class | Tbd |
| Back-to-back wheel spacing | Tbd |
| Wheel properties<br>Diameter<br>Material<br>Plate<br>Profile<br>Dynamic balance | <br>36 inch<br>Grade B, Rim treated<br>Curved<br>1:40 *<br>Tbd |
| Bolster or bolsterless | Bolster |
| Tilting or non-tilting | Non-tilting |
| Car body connection | Tbd |
| Speed sensor and other equipment mountings | Tbd |
| Brake equipment mountings | Depending on Mechanical Team requirements |

* It is recognized that the wheel profile is readily altered if required for a particular application

It can be seen from the above that the team considered it possible to specify a particular design of wheelset to be used in all trucks for this application. However, this would depend on the Mechanical Team deciding that one particular design of braking arrangement would be appropriate.

The following were considered by the team as not suitable for standardization at this stage. The intention would be to leave these issues open to each designer. Once the designs were submitted, the preferred design would be selected and that would become the standard truck for this application.

**Items Considered NOT Suitable for Standardization**

| Item | Options |
|---|---|
| Secondary suspension type | Coil spring, air bag or hydraulic |
| If air spring<br>type<br># levelling valves per car<br>Levelling valve design | <br>rolling diaphragm or convoluted<br>2, 3, or 4 |
| Damping | Hydraulic, orifice, friction |
| Traction rod arrangment | |
| Side bearing arrangement | |
| Truck frame arrangment | |
| Truck frame construction | Cast or fabricated |
| Truck material | Steel or aluminum |
| Primary suspension arrangement | Symmetric, trailing arm, etc. |

Actions

1) John Tunna and Brian Marquis are to write-up the team's discussion (this document) and distribute it to team members by April 27, 2010.

2) A conference call (DIAL-IN NUMBER: 877-336-1839, ACCESS CODE: 9247387) will be held on May 7, 2010 at 15:00 ET.

3) Team members are to discuss changes to the C21 truck specification with their colleagues and suggest values for the performance requirements and candidates for standardization. Comments to be ready on or before May 7, 2010

4) Brian Marquis is to investigate the alternative specifications for passenger comfort and report back on or before May 7, 2010.

5) Phil Strong is to review the responses to the questionnaire for items relevant to the VTI specification and report back on or before May 7, 2010.

Questions

1) Can we have a copy of CALTRANS specification 5-102?

2) Is the maximum allowable cant deficiency 5 inches?

## Report of the Structural Sub-group:

During the break out session for the structural sub-group the team leader started with a review of the objectives, scope, and methodology to be applied in order to develop a refined procurement specification for a bi-level coach car by the July 2010 deadline. The group agreed that the most reasonable approach was to start with a nearly complete procurement specification (C21 developed by Caltrans) and take appropriate sections and update with performance requirements developed by the team. Because of the intention to incorporate crash energy management functionality within the first car under consideration, the group also agreed that review and use of the SCRRA Crash Energy Management procurement specification was appropriate.

Several assumptions had to be made by the team in order to start the development of refined draft text incorporating CEM. These assumptions were:

- In order to achieve interoperable and compatible performance with the new car design the starting point would be a bi-level coach car fully compliant with all applicable federal regulations and with an overlay of crash energy management features.

- It was decided that the car design was to be an intermediate coach. That is one car set back from the very end of the train – for push-pull service the end car would be a cab car.

- In order to introduce CEM features onto the ends of the car, the group needs 3-4 feet on each end of the car for the individual components of the crush zone. The physical shortening of the car in non-occupied locations would be less than the volume defined.

- The material from which the car will be constructed is to remain open to allow for interest by more car builders .

- It is assumed that the basic design volume envelope is the same as that specified in the C21 procurement specification with the most restrictive clearance diagram.

Upon review of available literature over the weekend, it should be noted that it is possible to place the CEM car at the very end of the train because if it is fully compliant with all the existing federal regulations then the performance of the car can never be worse than an existing car.

In addition to the assumptions listed there were also a number of questions that the sub-group posed for the Technical Sub-committee:

- In order to define appropriate levels of energy absorption of a crush zone for the new equipment, it is necessary to understand the basic operating environment that the equipment will be used within. [The response from the committee was that train lengths could vary from 10 to 20 passenger cars with additional baggage and either mail cars or auto-carriers. The maximum length of the train could be 45-50 cars.]

- In order to maximize the number of cars developed under this procurement specification the structural group asked if it would be possible to have a single class of equipment as opposed to a Western type of car and a North East Corridor (NEC) type of car. Car orders greater than 200 per year are necessary to keep a production line fully engaged and it was suggested that orders up to 600 cars would make a new car design development attractive. [The response was that for the time being there is a need for the Western class of car and that it was already agreed to that the Technical Sub-committee would revisit a NEC class of car at a later date. The Executive Committee is supposed to be developing a National Car Procurement Plan to describe clearly the potential order sizes for the car builders and part manufacturers.]

- It is necessary to understand the needs that Amtrak and the State Department of Transportation's have in terms of platform height and side loading door locations. [Platform height is a considerable issue due to the ADA requirements defined. For the time being the staring assumption is that there will be two platform heights depending upon where in the country your operation is. Currently Caltrans is planning on platform height s roughly 18 inches above the top of rail – so that will be the starting point. Inter-car door passage will be at the same level as the current Surfliner designs. Side loading will be away from the very ends of the car.]

- The structural sub-group requested that the other teams help develop a reasonable weight budget for the car – to promote areas where weight savings can be achieved. [This is an open question.]

Two areas of discussion were ultimately passed forward to the car systems integration team: the idea of intellectual property rights and "Buy America" requirements.
The sub-group decided that it would meet weekly and utilize GoToMeetings to share documents real time. The weekly phone call is scheduled form Wednesdays from 1:00 through 2:30 E.S.T. The first meeting will cover a review of the survey results from the States to better clarify requirements that impact the carbody structural design and review of certain sections of the C21 and SCRRA CEM specification. The sections of a typical specification that the structural group will cover include: Section 2.0 general, Section 3.0 carbody, Section 4.0 couplers, Section 19.0 workmanship and materials, and Section 20.0 testing and compliance. Assignments were made to team members to start merging the specifications for discussion at the weekly meeting. The structural sub-group will work closely with all the other sub-groups to incorporate necessary hard-points for attachment of sub-assemblies or components as well as to manage the design envelope for placement of components. A strong focus on modularity of design with potential for standardization of components will be maintained.
Amtrak clarified that for sections to be incorporated in the first procurement specification due end of July that all technical input would be due on June 16, 2010. Therefore the structural sub-group will work towards this date for delivery of a refined set of draft sections.

# Report of the Locomotive Sub-Group:

During the first meeting of the PRIIA 305 Sub-committee locomotive group, the following were discussed.

Committee Members

The people on the Locomotive Group committee are:

- John Anderson — National Railway Equipment Co.
- Len Baran — General Electric Transportation – Locomotives
- Michael Coltman — FRA - Volpe Center
- Rick DeBella — Megger, Inc. (Not sure if really interested in participating)
- Leonard Evans — Ohio Department of Transportation
- Norman Forde — STV, Inc.
- **Steven Fretwell — California Department of Transportation (Lead Person)**
- Antonio Garcia-Ricos — Vossloh Locomotive
- Boris Homenock — Vossloh Locomotive
- Michael Latour — Siemens
- John Madden — New York Department of Transportation
- Jack Martinson — Bombardier
- Joel McNeil — Brookville Equipment Co.
- Tammy Nicholson — Iowa Department of Transportation
- Allan Paul — North Carolina Department of Transportation
- Fritz Plous — Corridor Capital LLC
- Craig Prudian — Electro Motive Diesels
- Christopher Riley — Cummins, Inc.
- David Scott — David Scott Consulting
- Richard Stegner — Motive Power Inc.

**Design Considerations**

A list of Design Considerations was formulated. The list will be used by the Locomotive Group to discuss further and to use in the Locomotive Specification outline.

1. Main Engine – 6,000 HP or 8,0000 HP
2. Maximum Weight – TBD*
3. Trucks – TBD*
4. HVAC – Not external to the locomotive carbody to maintain aero dynamics.
5. Fuel Tank Size – To be determines based on the operational charactistics of the train set
6. Braking – Air and Blended Dynamic, incorporating Tread and Disk Brakes
7. Wheel Size – TBD*
8. Number of Axles – 4
9. Capable Push Pull Operations
10. Operating Speed – Up to 125 MPH
11. Head End Power (HEP) – Companion Alternator or Inverter powered using ICB.
12. HEP Size – 500KW to *00 KW depending on car load and number of cars in the train set.
13. Car Body Design – Aerodynamic. Use of composites
14. On board diagnostics of the locomotive. Remote monitoring
15. Ni/cad Batteries – weigh less and are more efficient
16. Sand Box Size – TBD or are they really needed
17. Clearance Envelope – Comply with Amtrak Clearance Diagram

18. Traction Motors – AC
19. Dual or Single Bus HEP – Need input from Car group
20. Communication Trainline Pin assignments – New APTA standards
21. Cab and external Noise – Less than FRA standards
22. On Board Fire Suppression system
23. EPA Tier 4 Standards. Tier # if Tier 4 unavailable at time of manufacture
24. Consideration of life cycle costs
25. Fuel and other operating efficiencies
26. Acceleration and Deceleration Considerations
27. 184 Day Maintenance intervals
28. Electric Windshield Wiper motors?
29. Operator's Cab Design
    - Number of Seats – 2 minimum
    - Toilet
    - Large windows for maximum visibility of the operator
    - Digital Gauges using Integrated Cab Electronics (ICE) panels
    - Electronic or Conventional Air Brakes

30. Other
    - Automatic Engine Stop Start (AESS)
    - Positive Train Control (PTC)
    - Locomotive Digital Video Recording System (LDVR)

TBD*: These items cannot be resolved until the issue of P2 forces and un-slung mass are studied and determined

**Committees**

Three committees were formed to discuss in further some of the questions we all had concerning the locomotive specification.

1. Buy America – To study the Buy America requirements. Group asking for a 60% domestic content. After the meeting, I decided to have the Buy America committee turn this task over to the Car Group headed by Ken Uznanski.
2. Performance Standards - To investigate and determine the P2 forces and un-slung mass of the locomotive. This information is needed to determine engine size, weight of the locomotive and other performance characteristics of the locomotive. This committee will also look and the track and wheel forces of a 125 MPH locomotive.
3. Environmental Considerations – This committee will look at the environmental characteristics of the locomotive. They will look at low emission fuel, EPA Tier level requirements and other environmental issues.

There is a conference call schedule for the week of May 3 to discuss progress made by the committees.

**Questions/Recommendations**

At this point, there were no questions for the Committee Chair person

**Conclusion**

I think we are off to a good start. Every member of Locomotive Group was interested in helping with our task and was very fore coming with information.

# Report of the Interiors Sub-Group:

Details of those on the group:

| NAME | Organization | Office Phone | Cell Phone | Email |
|---|---|---|---|---|
| Andrew M. Wood (Leader) | WSDOT | 360-705-7938 | 360-280-1540 | wooda@wsdot.wa.gov |
| Gene Germaine | Kustom Seating | 708-547-7000 | 847-417-6460 | ggermaine@kustomseating.com |
| Andre Gagne | Bombardier | 418-863-7248 | | andre.gagne@ca.transport.bombardier.com |
| Dharm Guruswamy | FRA | 202-493-6378 | | dharm.guruswamy@dot.gov |
| James Michel | HNTB | 703-253-5878 | | jmichel@hntb.com |
| Don Damron | Ohio Rail Dev.Comm. | 614-466-2059 | | don.damron@dot.state.oh.us |
| Claudio Bravo | RVB LA 703-326-9092 | 703-623-5786 | | claudiobravo@rvba.com |
| Nigel Davies | Interfleet Technology | 215-834-4067 | | davies.n@interfleetinc.com |
| Phil Pasterak | PB | 312-803-6539 | | Pasterak@pbworld.com |
| Paul Winkler | Siemens | +43-5-1707-41680 | | Paul.a.winkler@siemens.com |
| Jim Coston | Corridor Capital | 312-205-1000 | 312-480-2014 | jc@ccrail.com |

**Report of Discussion:**

Buy America:
The group considered this at length and initially decided that they needed a better definition of "Buy America" knowing that there were several definitions. Dharm read the prescriptive wording from the PRIIA documentation but members still felt this needed better definition. Kevin Kesler of FRA gave a more definitive answer and as a result of this the group tasked Andre and Paul to together within the next 2 weeks assemble a list of items that would "never" be made in America and for interiors these included such items as flat screen TV's. Some members of the group felt that the it depended on how far back in the process we were to go, for example for carpets do we go to see where the wool comes from that is woven into the carpet, do we look if the animals that made the leather was from America even if the seats were made in America. This is an important aspect the group felt needed to be more precisely defined.
A view was expressed from the car manufactures that to a large extent the decision to produce in America added cost and this would have a higher content the greater the order level for cars. They said that with 4 manufacturers each needing at least 150 car orders a year to make it worthwhile, that called for a sustained order of around 600 cars a year if we were to get more that around 60% American content.
A discussion surrounded whether we take the Californian produced standard and "red line" that or start from scratch. As only a couple of people on the group had seen these standard specifications it was decided that at today's meeting we start with a blank sheet of paper but that the group leader will circulate the standards set by California which future meetings will build upon.
Andre and Paul will provide the group within a couple of weeks a list of all the "interior items that will never be made in the USA and allocate a % of interior costs to them" so the group can report to the Cars group feedback on this issue.
The group considered an important aspect of car design. Manufacturers felt that the role of this group was to establish broad parameters e.g. we want 40 gallons or garbage per car, rather than decide what this looks like. They felt if we are over prescriptive we destroy innovation and we will have every rail vehicle look alike and future development will become stagnant. This important aspect was not resolved in the discussion and greater direction should be provided by the Executive who have not defined this aspect.
The group used, with slight modification the list sent around by the group leader to consider the aspects of the interiors they felt they should be considering.

These areas for the group were identified as:

A. Seats – The groups considered that we should ask Gene to get back to the group in the next week with the Pro/Cons for seat rotation. However, the group felt that they already knew that rotation resulted in many

seat failures, especially audio systems in the armrest, caused the seats to be 20% heavier and 15 to 20% more expensive to purchase in the first place. The impact on the pitch of the seat would be researched by Gene. Another aspect though that we felt could be made a standard was the track in which seats were fitted being made standard (as with airlines).

B. Lighting – recommendation for lights to be LED in future and that length of lighting tubes to be set as a standard. That way it would be easy to change out spares. It was agreed that there should be a standard to emergency lighting and floor lighting luminous strips but this group did not want to be prescriptive as to what these should be.
C. Tables – If we are able to gain support for not rotating seats then the number of cars with tables will diminish. However, the group supported the work done by the FRA to minimize bodily injury from tables. These could also be specified to attach to the seat track.
D. Windows – The groups had views on windows which they felt had been lost in the desire to make visibility better for passengers. A view expressed in the group was that the 1956 standard for window sizes should be included in the standards as this had been overlooked recently. It was pointed out that USA was at variance with the rest of the world with window surrounds and will not agree to adhesive fixing of windows and this was questioned why we would be different. A question arose about the size of windows and how they had grown in size and this could be an issue with the ejection of people. It was felt standardization of window size was an item that could be specified to manufacturers. Seat spacing must allow access to the emergency windows. Question here – why do other countries allow a hammer to break the glass but here we insist on an opening window? Do we assume that passengers here have less strength than elsewhere? Anything that seems an anomaly with elsewhere in the world is questionable as a standard.
E. Carpets – we agreed that the seating carpet should be a separate item than the corridor/aisle carpet which wears faster. We agreed this should be fixed with Velcro not glued which allows for faster replacement.
F. Garbage – agreed that current stipulation which does not specify recycling capacity is not acceptable and that generally the amount of garbage needs to be more than elsewhere. Several people on the group. The group finished our discussion here and need to revisit this issue.
G. Restroom – identified and not discussed
H. Luggage space – very diverse views here about enclosed and open. To be revisited on future calls.
I. Video/AV/announcement/WiFi – not yet discussed
J. Crew facilities – not discussed
K. Aisle width agreed we should work toward a 32 inch aisle but did not discuss stairs the second part of this aspect
L. Area for crew financial transaction – not yet discussed
M. Catering Cars – not yet discussed
N. Ceiling option – manufacturers said that plastics which had not been removed from options here should be back in mix if we wished to reduce weight of cars. Without this the panel sizes needed to be fixed as a standard.
O. Baggage Car – not reached today
P. Dining car – not reached today
Q. Heaters – these strips need to be standardized on two or three different lengths.

Some other aspects:
The group agreed to a weekly call which the leader will set up probably on a Wednesday at 3:00 pm eastern.

# Report of the Mechanical Subgroup:

## Team Members:

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| <<TBD>>[1] | Kawasaki | |

**Team Questionnaire:**

1) What components have been identified as part of your team's scope.

   Brakes (including handbrakes, air supply, piping and wheel slide protection), water/waste system, side and end doors (including diaphragms). We understand that there the brake system includes some overlap with activities of other teams (cab and electrical primarily).

2) Identify (if any) sub committees that your group has formed and identify the members.

   Given the small size of this sub-group, we determined that further refinement into smaller teams was not necessary.

3) Identify any additional support your team needs to complete the task.

   At this point, the group includes an ideal mix of talent. To complement this, members are going to reach out to others in appropriate fields with which they are acquainted for additional guidance and expertise as we proceed.

4) Define project milestones for each sub group with estimated timelines.

   During the April 22 meeting, we developed an approach to be used to track our progress while developing the final product for submission to the Technical Sub-Committee and planned our first teleconference for Monday, April 26 at 9:00 am ET. We plan to meet weekly at this time. We expect to complete the review of the bi-level specification by the end of May in order to allow one week to finalize the package and distribute it informally (see item 3) for peer review.

[1] Kawasaki has contacted the team lead asking to place one of its staff on the Mechanical Sub-Group. A specific representative from Kawasaki has not yet been identified.

5) Itemize any questions your team has identified necessary to complete your tasks. Identify those in which your received answers during the meeting and no longer require an answer.

   Much discussion occurred related to maintainability and accessibility for maintenance. Members noted that some specifications they have received specifically require demonstration of maintainability. Manufacturing quality and workmanship requirements (or lack thereof) in previous specifications with which the suppliers on the team have been involved were noted to have caused problems in the past. One manufacturer made it very clear that it is important to have clear (measurable) pass/fail criteria for each requirement in the specification.

6) Provide feedback as to your team's ability to meet "Buy America" requirements to qualify for PRIIA. Current requirements are 100% United States content. Provide recommendations for alternatives if unable to meet "Buy America" requirements.

   Lengthy discussion was had on this topic. Based on the recommendations from the Technical Sub-Committee Co-Chair (D. Engelhardt), the Sub-Group tabled these discussions acknowledging that resolving the Buy America dilemma is outside the scope of PRIIA 305 activities. Detailed comments on the Buy America provisions of PRIIA will be provided by each industry member of the Sub-Group as part of the final technical product

# Report of the Electrical Subgroup:

Electrical Committee Members

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Greg Gagarin, gagarig@amtrak.com – Acting Chairperson
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Larry Bertolini, LarryBertolini@rvba.com , (post meeting join-up)

Breakout Session Questions

1) What components have been identified as part of your team's scope.

Note: The Electrical group denotes A , B as primary and secondary priority for review. Number in bold next to A denotes highest priority ranking.

1. HVAC system (A)
2. HEP wiring harness & jumper cables, 480 VAC ground hook-up receptacle (A)
3. MU Cab Car 27 point wire assignment & jumper cable arrangement (A)
4. Emergency Interior Lighting (A) **6**
5. Interior Lighting (A)
6. Exterior Marker Lights (A)
7. Headlights (A)
8. Exterior light indicators (B)
9. 220 VAC Undercar transformers & undercar distribution (A)
10. Grounding protocol (A)
11. Batteries (A) – buy America issue.
12. Battery Charger systems (A) – buy America Issue
13. Battery Backup for Chillers & Point of Sale (B) **8**
14. Refrigeration Carts (B) **9**
15. Connectors – buy America issue
16. Door Control Panels (A)
17. Freeze protection (A)
    a. Door Threshold heaters
    b. Other Antifreeze protocols
18. HEP/ AC load budget – cable capacity (A)
19. HEP wire rating – train HEP load (A)
20. Material & Workmanship Standards (A) **5**
21. Testing Procedures (A) **5**
22. Ethernet / Data transmission backbone – see item 31. (A) **4**
    a. WIFI
    b. Wireless functions (signage, GPS display with route, stops, etc)
23. AEI Tags (A)
24. Cab Signal / ATS/ PTC (B)
25. Event Recorder (A)
26. Alerter(A)

27. Cab Video Cameras – Fwd facing & interior (A)
28. Train / wayside data communications (A) **7**
29. Monitoring Systems (B)
30. On-Board Diagnostics (B)
31. Car to Car Connectivity (A) **1**
    a. Network Protocols
    b. Software Revision control
32. Public Address, Intercom, Conductor's Buzzer (define physical, mechanical, electrical footprint – plug and play) A **2**
33. Wireless ticketing / Reservations (C)
    a. Manifest generation and real time updating
    b. Real time train status messaging to signage

2) Identify any sub-committees that have been formed - none at this time.

3) Identify any additional support your team needs to complete this task.
Outside engineering resources needed for interface &performance definition – needed for items "to be developed".

4) Process

- Prioritize components – a "have" list and a "to be developed" list

- Define performance, form, fit, and standardization criteria for each component in order of priority. Communications networks have highest priority. See ranking above. Review existing Caltrans specification 21C posted on www.highspeed-rail.org, Next Generation Committee,and prepare recommendations in order to achieve goals of modualarity and standardization of design. "Plug and Play" is the theme here.

5 ) Milestones

April 30, 2010
Prioritize list of "Have" and "To Be Developed" Items (Done)
Produce MS Project File

May 25, 2010
Development of Specifications for "T.B.D" Items

June 10, 2010
Integration of completed specifications for "T.B.D. items

June 16, 2010
Final Submittals to Amtrak to incorporate into PRIIA specification by all working committees.

July, 2010
Specification Due for bi-level car.

Other Notes and Remarks (from Greg's Notes)

- Main theme of goals for the specifications (Bi-Level coach, Single Level coach, 125 mph Diesel – Electric Locomotive) is Modular Design, standardized subsystems (to the greatest extent possible). All vehicles to be designed for operation speed of 125 mph.

FRA Comments – Kevin Kessler
- Buy America is high priority. Establish estimated time line to achieve 100% buy America.
- standardized wheel sets a must.
- equipment to operationally and functionally interchangeable between state procurements AND Amtrak.

- common components where feasible
- Working groups to :
    - define needed requirements
    - know what resources are available, i.e. California 21C Surfliner Spec
    - No “ground up” PCC design approach – use existing designs
    - FRA seeks commercial terms for technical release of OEM designs for 3rd party manufacture.
    - Recommend proposals for common manufacture
    - Identical components for vehicle repairs

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## Cars Subgroup Report:

Forthcoming

# 305 Technical Sub-Committee – Industry Participants: As of May 3, 2010

***Form Received and/or participated in subgroups at the April 22 meeting in Chicago***

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