



American Public Transportation Association

Rolling Stock Equipment Technical Forum

Gavin Fraser, Chair

Meeting Minutes

APTA Rail Conference,

Montreal, QC, Canada

June 16, 2014

RSTF Mission: *“It is the mission of the Technical Forum to advance the state of the art in the design, application, procurement, operation and maintenance of railcar rolling stock equipment with emphasis on technical issues, passenger safety, energy efficiency and standardization.”*

1. Introductions and Welcome

Gavin Fraser (Chair) opened the meeting at 7:03 am. There was a good turn out with approximately 35 people in attendance. Sign-in sheet is attached.

2. Approval of Minutes from Chicago Meeting

The minutes of the prior meeting (September 2013 at the APTA Annual meeting in Chicago) were approved without comment.

3. Preview – Rail Conference 2014/Ideas for 2015

Only one session in 2014 is focused on rolling stock, though it is two hours long. Aim to move back to two for 2015.

4. Forum Collaboration Website

Demo of how to reach the website delivered by Martin Schroeder. Can set preferences to be alerted when changes made to page. Requested the group to use the site:

- Go to www.apta.com and sign in. APTA members will need a MyAPTA account.
- In the upper right of the screen, click on the blue box that says “For Members” and select “My Committees” from the dropdown list.
- In the center of the next screen, you’ll see a list of Committee Collaboration Sites. Click on Rolling Stock equipment Technical Forum.

5. Vehicle Standards Update

- a) ASME standards – RT2 (Crashworthiness and Safety issues) for heavy rail vehicles was recently updated and rereleased. One change in the new edition revises the collision scenario from vehicle collision with rigid barrier to like vehicles colliding. The computational requirements to model such a collision can mostly be handled by PC’s now and the vehicle-to-vehicle collision scenario better represents potential crash instability, which is important to detect in simulation. RT1 for

LRVs and streetcars is being revised now. Cleaning up a lot of things: weight (sitting, standing, people's average weight) to affect AW0 – AW4; people are heavier now than when original calculations were made so some adjustment to seated passenger weight is needed. To address standing passengers, APTA is assembling a standards development team to specify standing passenger weight loading density to replace the AW-series approach of passenger loading density. The weight loading density considers a statistical methodology based on standing passenger loading density rather than number of persons per area as defined by the AW-series. (See APTA published paper, “*Changes in Rider Anthropometrics and the Effect on Rail Car Design*,” APTA Rail Conference, American Public Transportation Association, Philadelphia, June 4, 2013.) IEEE agrees that weight/sq. footage of flooring makes sense rather than estimating people's sizes. IEEE will recommend using identifiable sequence number for loading. Based on the statistical approach defined above, ASME RT Standards Committee has drafted the following language for vehicle weight categories (this may need updating in accordance with future anthropometric data published by CDC):

(a) *Ready-to-Run: A vehicle that is service ready with all mounted components, including full operating reserves of lubricants, windshield fluid, etc., but without any crew or passenger load.*

(b) *Seated Load: Ready-to-Run load plus the crew and all passenger seats occupied with average weight per person of 79.5 kg (175 lb).*

(c) *Car Volume Capacity Load: A Seated Load plus all available standee areas occupied with a standee density that results in a floor pressure of 488.4 kg/m² (100 lbs/ft²).*

NOTE: An alternate occupant weight based upon specific service conditions, such as service to airports and use of luggage racks, may be specified.

- b) Martin noted that the CPUC will be referencing RT1 and RT2. Target date for RT1 update: end of summer.
- c) High Rail Back-up Safety Warning: APTA is moving ahead on standards after investigation by NTSB of WMATA accident. Need help identifying manufacturers of this type of equipment. Can be lights, audible, any option, noting that audible may be insufficient if working with noisy equipment or working in tunnels. Need volunteers to help; will send out request to Forum membership.
- d) Wheel/Rail interaction project: This is an AREMA and APTA joint project for standards for commuter rail. May expand to include rail transit vehicles. It will review all available information (freight info, Amtrak, FRA) on optimal wheel and rail profiles. Commuter Rail properties may not have applied the best practices already known. Setting up a steering group to advise and set direction for project team. It was noted that this should not be limited to just wheel/rail – it needs to include truck/suspension characteristics or whole vehicle as all affect dynamic performance. Good data is already available and will be included. New information is coming up from researchers in this area – for example new work on wear rates conducted at TTCI and elsewhere. Need volunteer(s) to represent the vehicle impact on the interface. Looking for people who know dynamic modeling. Dave Diaz volunteered for the steering committee. AREMA/Martin will be organizing a webinar on this topic in the near future.
- e) Additional standards work or comments:
 - i) ASHRAE updated guidance for HVAC – this is out for comments (Ken Hesser chairs the ASHRAE committee). Fresh air volume is moving to become a function of passenger load. Weight is the easiest way to measure load.

ii) Streetcars – Application of NFPA 130 to low floor vehicles presentation at the Conference on Tuesday. Tried to quantify impacts to design of the standard. Six car builders responded; three issues: doesn't use categories like EN standards, floor and roof burn-through have biggest impact on car design. Burn through time was changed from 15 to 30 minutes – hard to understand why, given there is little under the floor. Not full answer – a step along the way to determining an answer. EN4545 – new European standard begun in 2013. Are suppliers expected to change designs to comply with new Euro norm and then change again for NFPA 130?

iii) FRA is interested in the APTA standards program. Looking at providing some funding. Scope of APTA work likely to increase.

6. TCRP Submittals

TCRP has funding constraints and the submittal deadline was the day before the meeting (although probably extended two weeks). No formal submission from Forum. A40 study discussion Wednesday at 1 pm on station platform/vehicle interaction.

7. Work Pan – Planning the Coming year

Standards are becoming a hot topic. Are there standards we can help develop? What about becoming a clearinghouse? We could produce an Annual Report that shows all the standards – that also considers the issue of cross-vehicle applicability. We could also create a single database with links to documents. Invite people from other groups to come to a meeting to discuss. Start with database of what we have and what's being worked on. Identify conflicts (two or more groups working on the same thing differently). Also need to track European standards as they affect US industry increasingly. Need matrix centrally located. It was noted there is a parallel effort in Europe funded by EU: gathering all info – spreadsheet downloadable now. An email will be sent to the group calling for volunteers.

- Passenger weight will become a work program from this Forum. Make recommendation for standards: Structural, HVAC, floor loading, car configuration need to be taken into account. Need clarity.

- DMU fuel tanks – need volunteers for this too. Good quantitative approach was done some time ago but not well received by FRA. Updated but presently stalled.

8. Presentation: Bernard Kaufmann from UNIFE on IRIS (International Railway Standards).

9. Presentation: Steve Turley, Perpetuum. Update of sensor deployment in the UK. Deployed on 600 cars, 148 trains, using 5,000 sensors. Wireless condition monitoring.

10. Next Meeting:

Annual meeting/Expo in Houston – 1:00pm, Sunday, October 12, 2014.

Respectfully submitted,

Natalie E. Cornell, Secretary