AGENDA - BACKGROUND

TANK CAR COMMITTEE

SUBCOMMITTEE 1

Colorado Springs, CO
October 16-17, 2013

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Subcommittee 1 Tank Car Committee Docket

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Discuss Requests for Extended Life

Recent Activity:
At the July 2013 meeting, K. Dorsey continues to work with EEC in regard to the availability of extended life on training cars.

At the October 2012 meeting, K. Dorsey stated that extended life program will no longer exist after July 1, 2014. Tank cars built after July 1, 1974 have a 50 year life as built.

At the January 2013 meeting, K. Dorsey stated that AAR continues to receive extended service request. Some proponents have asked if training cars can receive extended service. TCC agreed to have K. Dorsey send an official request to EEC to see if training cars can receive extended service.

At the April 2013 meeting, the extended life program will no longer exist after July 1, 2014. There has been no reply from EEC in regard to the availability of extended life on training cars. Charlie Powell is the contact at TTCI that handles extended service request.

At the July 2013 meeting, K. Dorsey continues to work with EEC in regard to the availability of extended life on training cars.

CURRENT TF: K Warner (Chr), H Gassen, JP Gagnon, D Meyler, J Byrne, J Sbragia (co-Chr), K Dorsey, S Lauver, T Waggoner

TF CHARGE: Determine if extended life should be allowed for tank cars and if so what documents should be used to make the determination.

R EFERENCES: P Kinnecom 7/9/07X2, 7/10/07, 7/31/07; J Sbragia 2/22/08, 2/28/08, 3/7/08; K Dorsey 3/7/08

Bottom Outlet Performance

Recent Activity:
At the July 2013 meeting, P. Student stated that the TF proposal passed during the April 2013 Sub 1 TCC meeting, however during the executive session of the TCC meeting TF members stated that they had not had a chance to review the changes in the proposal. P. Student stated that the way the proposal is written it provides several options. The TF will reconvene to address the changes in the proposal and will plan to have it finalized proposal by the October 2013 TCC meeting.

This docket was opened to review multiple incidents where unsecured BOV operating handles have moved to the open position during transportation. Initial investigation of several incidents seem to indicate that valves that have opened during transportation are due to vibration. The TF needs to investigate ways that valves can be secured so that environmental conditions close rather than open valves.

At the October 2012 meeting, P. Student stated that the TF is looking at different options to dis-engage the bottom outlet operating handle prior to placing the tank car into transportation. L. Loman stated that Appendix A will need to be reviewed to allow for other operation options. Primary and secondary closure requirements are also being reviewed to evaluate bottom outlet performance. TF is looking at clarifying the following paragraphs in M-1002:

10.1.2.5 Any vertical extension of the discontinuity below the protective device must be designed to break off without rupturing the tank or releasing lading. The protective device must extend down to, or below, the level of the discontinuity or its designed breaking point.

For bottom outlets, the skid should extend down to the breakage groove or to the extremity of parts comprising the equivalent of a breakage groove.

For washouts and blind flange closures, the skid should extend down to the bottom of the studs attaching the bottom closure.

For sumps or other discontinuities not exempted in paragraph 10.1.1

10.1.2.8 Bottom outlet valve handles, unless stowed separately, must be designed to either bend or break free on impact, or the handle in the closed position must be located above the bottom surface of the skid.

AAR received the following TF proposal via email from P. Student 1/11/2013:
T10.7.5 Bottom Outlet DRAFT 1-13-13

Existing CIII Appendix E; For bottom discontinuities not excluded above, a protective device must be designed as follows:
10.1.2.8 Bottom outlet valve handles, unless stowed separately, must be designed to either bend or break free on impact, or the handle in the closed position must be located above the bottom surface of the skid.

Proposed
10.1.2.8 Bottom Outlet Actuation

10.1.2.8.1 For cars ordered built new before January 1, 2014, bottom outlet valve handles, unless stowed separately, must be designed to either bend or break free on impact, or the handle in the closed position must be located above the bottom surface of the skid.

10.1.2.8.2 Cars ordered built new on or after January 1, 2014 equipped with bottom outlet valves must have handles in a configuration specified below:

- Handle that is stowed separately:
    - Handles that are stowed separately must be equipped with a coupling as shown in Fig. E31(a) and valves must be equipped with a coupling as shown in Fig. E31(b). Figure for illustration purposes only.
    - Provision must be made for handle stowage to prevent loss of handle due to stresses or shocks incident to transportation.
- Handle that is located completely within the skid:
    - Handles can remain coupled to the valve provided they remain completely within the skid when in the closed position, and be equipped with a closed-position locking mechanism that requires a shear force in excess of TBD (*e.g.*,½" diam) pounds at the locking mechanism to operate the valve when locked.
- Handle that is disengaged from the valve when in the closed position:
    - Handles that are not stowed separately and located outside of the skid:
        - When in the closed position must be located above the bottom surface of the skid, and be disengaged from the valve.
        - When in the closed position must be equipped with a means to prevent unintended engagement with the valve.
        - When in the open position must remain engaged (coupled) with the valve.
- Alternate means of actuation are permitted, if approved by the AAR Tank Car Committee meeting the intent of these rules.

10.1.2.8.3 Fully open valve position must be clearly discernible from the side of the car when viewing at the bottom skid level.

10.1.2.8.4 The valve operating mechanism must insure against the operation of the valve due to stresses or shocks incident to transportation.

TRINITY INDUSTRIES, INC.

TRI 910 (R 10/94)

Customer	S/O No.	Item	Date
			12/13/12
Subject	**P.O. No.**	**By**	
		ADM	

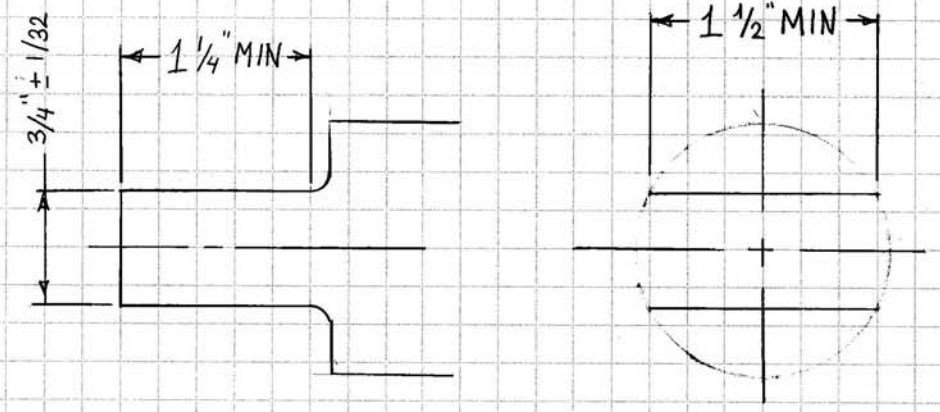


FIG. E31(a)

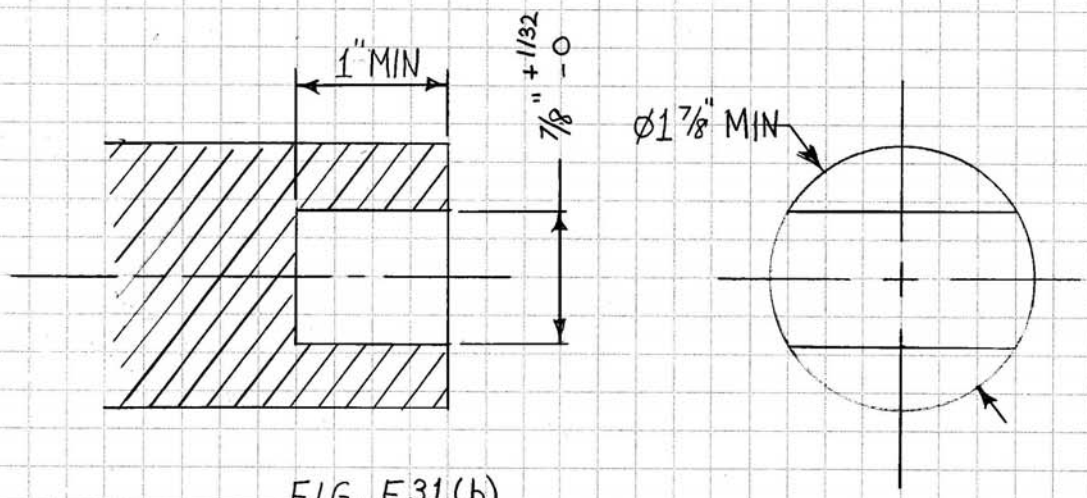


FIG. E31(b)

At the January 2013 meeting, P. Student stated that the TF plans to have a final proposal by the April 2013 TCC meeting.

At the April 2013 meeting, P. Student provided an update via PowerPoint presentation. Pat discussed the proposed language, which was provided in the additional material prior to the meeting. There are three configurations that must be met. Implementation date would be applied to cars built new with an implementation date to be determined.

Action Taken: Motion made, seconded, and passed to move proposal with change in 10.1.2.8.2 to the executive TCC for consideration for approval.

10.1.2.8.2 Cars ordered built new on or after date to be determined equipped with bottom outlet valves must have handles in one of the ~~a~~ configurations specified below.

Executive Committee Action Taken: A motion was made, seconded, and passed to have the TF finalize the proposal with TF members before going to the TCC for consideration.

At the July 2013 meeting, P. Student stated that the TF proposal passed during the April 2013 Sub 1 TCC meeting, however during the executive session of the TCC meeting TF members stated that they had not had a chance to review the changes in the proposal. P. Student stated that the way the proposal is written it provides several options. The TF will reconvene to address the changes in the proposal and will plan to have it finalized proposal by the October 2013 TCC meeting.

AAR receive the TF draft proposal via email on

T10.7.5 Bottom Outlet DRAFT 4-4-13

Existing CIII Appendix E; For bottom discontinuities not excluded above, a protective device must be designed as follows:
10.1.2.8 Bottom outlet valve handles, unless stowed separately, must be designed to either bend or break free on impact, or the handle in the closed position must be located above the bottom surface of the skid.

Proposed
10.1.2.8 Bottom Outlet Actuation

10.1.2.8.1 For cars ordered built new before date to be determined, bottom outlet valve handles, unless stowed separately, must be designed to either bend or break free on impact, or the handle in the closed position must be located above the bottom surface of the skid.

10.1.2.8.2 Cars ordered built new on or after date to be determined equipped with bottom outlet valves must have handles in a configuration specified below:

- Handle that is stowed separately:
  - Handles that are stowed separately must be equipped with a coupling as shown in Fig. E31(a) and valves must be equipped with a coupling as shown in Fig. E31(b). Figure for illustration purposes only.
  - Provision must be made for handle stowage to prevent loss of handle due to stresses or shocks incident to transportation.
- Handle that is located completely within the skid, or within the profile of the skid:

- Handles can remain coupled to the valve provided they remain completely within the skid when in the closed position, and be equipped with a closed-position locking mechanism that requires a shear force in excess of TBD (*e.g.*,½" diam) pounds at the locking mechanism to operate the valve when locked.
- Handles can remain coupled to the valve provided they remain completely within transverse profile of the skid when in the closed position, and be equipped with a closed-position locking mechanism that requires a shear force in excess of TBD (*e.g.*,½" diam) pounds at the locking mechanism to operate the valve when locked. In addition the end of the valve handle in the closed position must be protected.

- Handle that is disengaged from the valve when in the closed position:
  - Handles that are not stowed separately and located outside of the skid:
    - ~~When in the closed position must be located above the bottom surface of the skid, and be disengaged from the valve.~~
    - When in the closed position must be equipped with a means to prevent unintended engagement with the valve.
    - When in the open position must remain engaged (coupled) with the valve.
- Alternate means of actuation are permitted, if approved by the AAR Tank Car Committee meeting the intent of these rules.

10.1.2.8.3 Fully ~~open~~ closed valve position must be clearly discernible from the side of the car when viewing at the bottom skid level.

10.1.2.8.4 A stencil must be located in the immediate vicinity of the valve that shows what the valve should look like with the valve in the closed position, and how to operate the valve.

10.1.2.8.~~4~~5 The valve operating mechanism must insure against the operation of the valve due to stresses or shocks incident to transportation.

CURRENT TF: P. Student (Chair), G. Sandheinrich, A.D. McKisic, A. Richter, J. Perez, C. Machenberg, K. Alexy, J. Sbragia, GE (TBD), R. Spring, R. Broch, J. Becherer, D. Foley, and N. Krzanwsky, J. Bart, M. Clark, S. Murray, T. DeKoning, K. Warner, C. Wyler, R. Weinstein, L. Loman, M. Richardson, L. Majors

TF CHARGE: To investigate bottom outlet operating mechanisms, identify styles that are susceptible to allowing the valve to open under accident and non-accident scenarios and make recommendations. To investigate current bottom outlet protection requirements, determine opportunities to enhance protection and make recommendations.

REFERENCES: P. Student (9/29/11, 4/2/12, 1/11/13)

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that the next docket will only include the last 12 months of docket information only. K. Warner stated that there are three dockets in need of a CPC to be published by AAR; T90.20, T93.19.1, and T 94.1.4.

K. Dorsey stated that AAR recently received three new tank car design applications.

Letters that have been published between October 1, 2012 – January 7, 2013:

Date	Number	MA/EW	Subject
12/12/2012	C-11862		Implementation, AAR MSRP Section C, CAR CONSTRUCTION – FUNDAMENTALS AND DETAILS, New Specifications M-800 "Hopper Car, Covered – For Transport of Oxidizing Commodities" and M-801 "Hopper Car, Covered – Pressurized During Unloading..."
12/12/2012	C-11861		Subject: 2013 Field and Office Manuals of the AAR Interchange Rules effective January 1, 2013
12/11/2012	CPC-1247		Proposed Removal of Class E Tank Car Facility from Appendix B of M-1002 (T91.21)
12/11/2012	C-11860		Q3 M-1003 CERTIFIED CONTRACTOR REGISTRY
12/11/2012	C-11859		Revision to Tank Car Commodities as Listed in Appendix A of MSRP Section J, Specification for Quality Assurance
12/11/2012	C-11858		AAR M-1003 Basic Quality Assurance and Auditor Training Seminar
11/30/2012	C-11848		Implement Revisions to MSRP Section F, SENSORS, S-920: AAR Component Identification (CID) Bar Code Standard – New Field –Bearing Locking Plate Type
11/29/2012	CPC-1246		Removal and reservation of Chapter 4, Acceptability of Tank Containers and Tank Trailers from the AAR Manual of Standards and Recommended Practices, Section C, Part III, Specifications for Tank Cars (M-1002) (T101.600.27)
10/16/2012	CPC-1244		Tank Car Committee Certified Tank Car Facilities (Classes A, B, C, D) and Registered Tank Car Facilities (Classes F, G, L) T91.13
10/9/2012	CPC-1243		Request for Comments on the removal and reservation of Chapter 4, Acceptability of Tank Containers and Tank Trailers from the AAR Manual of Standards and Recommended Practices, Section C, Part III, Specifications for Tank Cars (M-1002) T101.600.27
10/1/2012	CPC-1242		Recommended Railroad Operating Practices For Transportation of Hazardous Materials (OT-55-M)

AAR Circular Letters (continued)

At the January 2013 meeting, K. Dorsey reported on the most recent circulars and CPC's published relating to the tank car industry.

CPC-1245 Pamphlet 34
CPC-1246 Removal of Chapter 4 from M-1002
CPC-1247 which removed Class E Tank Car Facilities from M-1002 specification
CPC-1249 list of active certified and registered tank car facilities
CPC-1250 Appendix A Editorial Implementation
C-11859 Revision to Tank Car Commodities as Listed in Appendix A of MSRP Section J, Specification for Quality Assurance

Comment on CPC-1245: K. Warner stated that the updated pamphlet 34 is missing the gasket information from T93.19.1 TF. AAR plans to review and ensure that Appendix E wording agrees with Appendix D. A revised pamphlet 34 will be drafted and sent out for comment via CPC.

Letters that have been published between January 7, 2013 – April 5, 2013

Date	Number	Subject
3/12/2013	C-11906	2012 Q4 M-1003 CERTIFIED CONTRACTOR REGISTRY
2/21/2013	CPC-1251	Implementation of Changes to Appendix A of M-1002
2/21/2013	C-11895	Implementation of Revisions to MSRP Section C, CAR CONSTRUCTION FUNDAMENTALS AND DETAILS, Placard Related Standards S-229 and S-2008
2/21/2013	C-11894	Solicitation of Comments on Proposed Revision to MSRP Section C-II, Specifications for Design, Fabrication, and Construction of Freight Cars, M-1001, Paragraph 2.1 Design Data
1/18/2013	CPC-1249	Tank Car Committee Certified Tank Car Facilities (Classes A, B, C, D) and Registered Tank Car Facilities (Classes F, G, L) T91.13
1/18/2013	CPC-1250	Implementation of Changes to Appendix A of M-1002
1/18/2013	CPC-1245	Pamphlet 34 Recommended Methods for the Safe Loading and Unloading of Non-Pressure (General Service) and Pressure Tank Cars (T9.2)
1/16/2013	CPC-1248	Removal of Class E Tank Car Facility from Appendix B of M-1002 (T91.21)
1/16/2013	C-11878	Solicitation of Comments: MSRP Section C, New Appendices E2 and G1 to Standard S-2044, SAFETY APPLIANCE REQUIREMENTS FOR FREIGHT CARS

At the April 2013 meeting, K. Dorsey reported on the most recent circulars and CPC's published by AAR related to the tank car industry. Not listed but recently published was CPC-1252 and CPC-1253.

AAR Circular Letters (continued)

Letters that have been published between April 5, 2013 – July 9, 2013

Date	Number	Type	Subject
6/24/2013	C-11972		Wheel Set Component ID Reporting
6/14/2013	CPC-1256		M-1002 Certified Tank Car Facilities (Classes A, B, C, D) and Registered Tank Car Facilities (Classes F, G, L) T91.13
6/7/2013	C-11961		AAR QA - Root Cause and Corrective Action Training Seminar - August 7-8 - Chicago, IL
5/29/2013	CPC-1255		Proposed Appendix B of M-1002 Request for Comment (T91.2.1)
5/29/2013	CPC-1254	MA - 141	Freight Cars Overdue for Compliance and Maintenance Activities
5/8/2013	C-11937		AAR QA - Root Cause and Corrective Action Training Seminar - June 11-12 - Chicago, IL
5/3/2013	C-11922		AAR M-1003 Quality Assurance Program and Basic M-1003 Auditor Training Seminar
4/19/2013	CPC-1253		Inspection of Tank Car Stub Sills and Brackets Welded to Tank Cars Tanks
4/19/2013	CPC-1252		Notice of the Availability of the Tank Car Inspection Database

At the July 2013 meeting, K. Dorsey stated that the next docket will only include the last 12 months of docket information only. K. Warner stated that there are three dockets in need of a CPC to be published by AAR; T90.20, T93.19.1, and T 94.1.4.

K. Dorsey stated that AAR recently received three new tank car design applications.

Letters that have been published between July 9, 2013 – September 25, 2013

Date	Number	Type	Subject
9/20/2013	C-12011		AAR Quality Assurance Training Seminar – Basic
8/30/2013	C-12011		AAR Quality Assurance Training Seminar – Basic
8/30/2013	C-12012		AAR Advanced M-1003 Lead Auditor Training Seminar
8/12/2013	CPC-1259		Proposed Appendix B of M-1002 Request for Comment (T91.2.1)
8/5/2013	CPC-1258		Recommended Railroad Operating Practices for Transportation of Hazardous Materials
8/2/2013	C-11996		AAR Advanced M-1003 Lead Auditor Training Seminar
7/31/2013	CPC-1257		Proposed Changes for Tank Cars Transporting Ethanol and Crude Oil Request for Comment
7/30/2013	C-11995		Implementation of Proposed Changes to MSRP Section F, SENSORS Specification S-920; AAR Component Identification (CID) Bar Code Standard – Bolsters, Side Frames and Couplers
7/17/2013	C-11990		Field Manual Rule 66: Reporting of Reflective Sheet Applications in Umler -- Reminder
7/16/2013	C-11985		AAR M-1003 Quality Assurance Program and Basic M-1003 Auditor Training Seminar

Recent Activity:
At the July 2013 meeting, K. Dorsey reported on the proposal in the docket.

Action Taken: Motion made, seconded, and passed to have AAR publish the proposal as written via CPC.

This docket was opened to discuss the recommendation to create a new appendix within MSRP C-III for fluid sealing. The goal of the TF would include the review of basic philosophies and best practices for fluid sealing. The result of this work would be a recommended practice, not a standard.

At the October 2012 meeting, J. Rader summarized the proposal handed out during the meeting describing a new recommended practice titled "Guideline for threaded and bolted flange joint assembly". The plan is to have a finalized proposal by the January 2013 TCC meeting. COD

At the January 2013 meeting, J. Rader stated that the TF plans to have a final proposal by the April 2013 TCC meeting.

At the April 2013 meeting, J. Rader discussed the recommended practice proposal identified in the docket. This recommended practice would reside in Appendix J of M-1002 with title Guidelines for Threaded and Bolted Flange Joint Assembly.

Action Taken: Motion made, seconded, and passed to move proposal as written to the executive TCC for consideration for approval.

Executive Committee Action Taken: A motion was made, seconded, and pass with editorial changes from Scott Murray. CPC will be published for comment.

At the July 2013 meeting, K. Dorsey reported on the proposal in the docket.

Action Taken: Motion made, seconded, and passed to have AAR publish the proposal as written via CPC.

AAR received proposal via email on 7/9/2013 from J. Rader:

APPENDIX J
GUIDELINES FOR THREADED AND BOLTED FLANGE JOINT ASSEMBLY

Recommended Practice
RP-XXX
Adopted: January 1, XXXX

1.0 INTRODUCTION

1.1. Scope. This document provides guidance for the proper assembly of threaded and bolted connections of service equipment to tank cars. This document presents general guidelines for the assembly of threaded and bolted connections and recommended procedures. It is not a complete and comprehensive set of methods,

instructions, or procedures applicable for all situations. Each user company is encouraged to develop specific procedures using this document as a general guide where it applies. The guidelines outlined in this document cover the assembly elements essential for a high level of joint integrity of otherwise properly designed and constructed threaded and bolted flanged connections.

1.2. Before performing any work, follow plant safety procedures to relieve the pressure safely from the tank.

- Observe current conditions;
- Utilize checklist to ensure thorough documentation of "*as received*" conditions;
- In particular, look for apparent leaks, loose fasteners, and gasket condition; and
- Assembly personnel should report visible leaks thru their proper channels/appropriate supervisor.

1.3. Recognizing the array of areas that could lead to equipment connection failures, this Appendix uses a "*best practices*" approach to evaluate and work with equipment connections. In simplified terms, this is an "*inspect-to-pass*" process where the equipment connection is evaluated, and if the connection fails, additional examination and possibly rework will be required. Tank car leaks not only endanger employees, but also result in expensive fines and remediation along with poor visibility in the public domain.

1.4. Each tank car facility performing work in accordance with this Appendix must obtain an Association of American Railroads, *Manual of Standards and Recommended Practices*, Section C, Part III, Specifications for Tank Cars, Appendix B, certification or registration, as appropriate.

2.0 DEFINITIONS

The definitions and abbreviations in Chapter 1, paragraph 1.2, apply in this Appendix.

3.0 THREADED CONNECTIONS

3.1. Disassembly and inspection

3.1.1. Disassemble with an appropriate wrench to avoid damaging valve, fitting body, or flats.

3.1.2. With a wire brush, clean threads of foreign material, such as PTFE tape, joint compound, paint, and commodity.

3.1.3. Using a clean cloth or paper towel, wipe the thread surface to remove any residual material or solution.

3.1.4. Inspect the threads to confirm that there are no cuts, gouges, or other defect that may affect sealing integrity.

3.1.5. Inspect the threads with an appropriate ring or plug gauge.

3.1.6. Repair damaged or out-of-tolerance threads when practical or replace in-kind.

3.2. Assembly

3.2.1. Ensure that the threads (male and female) are clean prior to assembly.

3.2.2. Apply a PTFE thread lubricant tape or paste to the male threads. If using tape, wrap the tape in the direction of the thread spiral, beginning with first thread. Do not wrap outside of the threads, or exceed three (3) wraps of tape. PTFE tape and paste is a thread lubricant not a thread sealant.
Note: Thread sealing compounds are not recommended on pipe thread joints.

3.2.3. Thread the joint slowly to avoid producing excess friction. Heat produced by friction can cause the metal to expand before properly making the joint.

3.3. The following table identifies the length of minimum thread engagement, including the first three (3) lead threads, required to make a tight joint.

Table F1. Thread Engagement

Size of Pipe (diameter)	Length of Thread
1/4	3/8
3/8	3/8
1/2	½
3/4	9/16
1	11/16
1-1/4	11/16
1-1/2	11/16
2	¾
2-1/2	15/16
3	1
3-1/2	1-1/16
4	1-1/8

3.4. All joint connections must pass a leak test after assembly.

3.5. Tool Usage

3.5.1. When replacing a valve or fitting, use two wrenches to prevent rotation of other joints.

3.5.2. Use a suitable size wrench for the size of pipe or fitting removed or installed.

4.0 BOLTED CONNECTIONS

4.1. Disassembly

4.1.1. Prior to disassembly, draw a reference mark from the component to the car to ensure proper orientation when reassembling.

4.1.2. Loosen fasteners or nuts using suitable type of wrench, avoiding damage to fasteners where possible.

4.1.3. On badly corroded fasteners, apply penetrating oil to ease removal.

4.1.4. Separate fitting flanges using soft metal tools taking care not to score or scrape mating surfaces.

4.2. Gasket Removal

4.2.1. Removal of Non-Asbestos Gaskets and Other Debris.

4.2.1.1. Use steel or brass tools to remove all parts of the old gasket material and debris from the flange sealing surface.

4.2.1.2. Avoid scoring or scraping the sealing surface.

4.3. Removal of Asbestos Containing Gaskets

4.3.1. Follow your facility's asbestos removal procedures.

4.4. Cleaning

4.4.1. Clean gasket-sealing surface.

4.4.2. Use a wire brush made of material compatible with the flange material to prevent cross contamination to clean the flange-sealing surface.

4.4.3. If needed, use fine sand or light abrasive blast to avoid damaging gasket surface profile, or utilize a gasket removal compound, or a suitable general-purpose degreaser.

4.4.4. For sealing surfaces that are clad, plated, or lined, clean these areas with a clean cloth only.

4.5. Inspection

4.5.1. Examination of Sealing Surfaces

4.5.1.1. Sealing surface must be clean, with no corrosion, gasket residue, dirt particles, or commodity residue.

4.5.1.2. Sealing surface must have no damage, such as tool marks, chatter, cracks, gouges, or pits that will affect sealing.

4.5.1.3. Defects that are deeper than 1/32-inch and are continuous across the gasket-sealing surface should be addressed.

4.6. Coated surfaces

4.6.1.1. A coated flange or rubber-lined surface is subject to special design consideration. Use best practices when dealing with this type of joint.

4.7. Inspect Fasteners, Nuts, and Washers

4.7.1. Before performing an inspection, clean fasteners, nuts, and washers as necessary.

4.7.2. Visibly check to ensure there is adequate thread engagement in accordance with Appendix D, paragraph 3.7.

4.7.3. Visibly check to ensure there is no missing or unreadable grade markings (may not apply to all fasteners [*e.g*., eyebolts and nuts]).

4.7.4. Visibly check to ensure there is no damage to the fastener or nut.

4.7.5. Inspect for thread damage.

4.7.6. Fasteners must not be bent or deformed.

4.7.7. Gouges, dents, nicks from tool marks (*e.g*., hammer marks) in non-functional areas does not constitute renewal.

4.7.8. Visibly check to ensure the washers are dimensionally suitable and are not damaged, cupped, scored, or cracked.

4.7.9. Check that the nut can be run up and down along the useable portion of the threads.

4.7.10. Inspect hinged and bolted manway cover, fill port cover, and eyebolts in accordance with Appendix D, paragraph 6.4.

4.7.11. If components are defective, replace in kind or according to owner instructions.

4.8. Assembly

4.8.1. Installation of Gasket

4.8.1.1. Ensure the gasket meets the following criteria:

4.8.1.1.1. Chemically compatible with the lading;

4.8.1.1.2. Thermally compatible with the highest and lowest temperature range (*e.g*., loading/unloading hot products);

4.8.1.1.3. Mechanically suitable for the respective flange; and

4.8.1.1.4. Dimensionally suitable.

4.8.1.2. When installing the gasket, the gasket must not bind or interfere with the fasteners.

4.8.1.3. When installing the gasket, the gasket should not interfere with product flow or the function of the pressure relief device, and the gasket must be concentric within the flange.

4.8.1.4. The size of the gasket must be sufficient to ensure gasket compression for sealing.

4.8.1.5. The gasket must have no damage after installation.

4.8.1.6. Other than in tongue and groove joints, the gasket, in general, should not be less than ½-inch wide.

4.9. Alignment of Mating Surfaces

4.9.1. Component must be installed in the same orientation as when removed from the tank car using the reference mark drawn during disassembly.

4.9.2. During installation, and as the component flanges come together, the flanges should remain parallel in order to prevent pinching the gasket.

4.9.3. The weight of some components can create handling challenges; and therefore, consider supporting the weight of the component during installation with the use of a lifting device.

4.10. Installation of Fasteners

4.10.1. New Fasteners

4.10.1.1. Fasteners securing a pressure-retaining fitting must be approved in accordance with Appendix M, or meet the design specification as annotated on the tank car drawing.

4.10.1.2. In accordance with Appendix M, paragraph 1.2.3, fasteners must have grade and manufacturer's identification (manway eyebolts and socket head cap screws are excluded unless required by the car owner).

4.10.1.3. Fastener grade markings must be oriented to allow for visible inspection.

4.10.1.4. Fasteners and nuts must be of the same grade and specification, unless specified otherwise by the car owner.

4.10.2. If required by design, apply specified lubrication (*e.g.*, anti-seize) to the working surfaces of the fastener and nut (*i.e.*, fastener threads, nut bearing surface, and if applicable, underside of bolt head).

4.10.2.1. Some commodities may require a specialized thread lubricant (*e.g.*, chlorine), or no thread lubricant.

4.11. Thread Engagement (not applicable to manway eyebolts)

4.11.1. After assembly, there should be one to two full threads exposed beyond each nut.

4.11.2. As a minimum, and in accordance with Appendix D, paragraph 3.7.4.5, nuts must be fully engaged. That is, no nut thread may be showing.

4.12. Blind Tapped Hole

4.12.1. Thread entire stud into the mounting flange, no more than one or two run-out threads should be visible.

4.12.2. The chamfered end of the stud must be fully engaged in the blind tapped holes of the mounting flange to the full depth of the mounting.

4.13. Existing Fasteners (used)

4.13.1. Follow the requirements in paragraph 4.10.1of this Appendix for new fasteners.

4.13.2. Fasteners may be re-applied if they are functional and not damaged. Clean by wire brush and compressed air when required. Do not clean fasteners by sandblasting.

4.13.3. After cleaning the fastener, the nut should turn freely for the entire threaded portion (not applicable to nuts with anti-vibration technology [*i.e.*, nylon insert nuts or security locknuts]).

4.13.4. When replacing one-half or more fasteners on the same fitting, the remaining fasteners on the same fitting also should be replaced with the same fastener and nut grade.

4.14. Tightening of Fasteners

4.14.1. Refer to car owner or other approved assembly procedures for proper joint tightening and fastener torque recommendations. The assembly procedures must take into consideration gasket size, gasket material, lubricant, bolt type, and regulatory requirements.

4.14.2. In the absence of a tightening sequence from the car owner or other approved assembly procedure, refer to:

4.14.2.1. Appendix D, paragraph 3.2.3, Figure D1 for manway cover plates, valves, fittings, and flanges.

4.14.2.2. Appendix D, paragraph 6.6, Figure D3 for hinged and bolted manways.

4.14.3. When tightening fasteners, use a calibrated manual or pneumatic torque wrench.

4.14.4. After assembly, perform a leak test, if required, in accordance with the applicable procedure.

5.0 JOINT LEAK TIGHTNESS

Acceptable methods of nondestructive testing ("NDT") are shown in Appendix T, Table T1. The NDT Level III must determine the applicability of any particular NDT method for a given inspection.

6.0 FUNCTION-SPECIFIC TRAINING OF ASSEMBLY PERSONNEL

6.1. Each employer should develop a systematic training curriculum for joint assembly personnel in accordance with the federal training requirements that contain the elements identified in each paragraph of this Appendix (See 49 CFR 172.700 *et seq*., and Transport of Dangerous Goods, Part 6). The program should include classroom training, hands-on training, a practical demonstration to confirm joint assembly personnel understood the training and can apply it in everyday situations, and on-the-job training. Assembly personnel who successfully complete the training curriculum, passed either a written or an oral exam, and demonstrated hands-on capability are considered qualified to assemble a threaded or bolted flange joint assembly.

CURRENT TF: J. Rader (Chair), D. Prince, M. Nunez, T. Sisto, R. Aliota, R. Jachim, S. McQueen, A. Schaffer, S. Martin, D. Reid, C. Edmonds, R. Spring T. DeKoning, P. Langley, L. Loman, J. Standish

TF CHARGE: The charge of the TF would include the review of basic philosophies and best practices for fluid sealing. The result of this work would be a recommended practice, not a standard.

REFERENCES: J. Rader (7/9/2013)

Evaluate the Performance of Half Height Head Shields

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that it is currently possible to petition DOT for a special permit for relief from the physical testing requirement for head shields and head protection. The TF will work on the language that would allow modeling in lieu of the physical test requirements. Current federal regulations do not require head protection systems on DOT 111 tank cars except for aluminum construction. TF plans to pull the marking language out of the proposal.

Bracket mounting systems missing – AAR has received evidence showing bolts missing from the head shield on tank cars. Railroads and FRA agreed to provide AAR with car numbers and initials for those tank cars missing the bolts. Before creating a TF the extent of the issue will be evaluated to determine if a TF is actually needed.

At the October 2012 meeting, K. Dorsey asked T. Treichel if research can be done to determine the distribution of tank head damage (i.e. top half versus bottom half of the head).

TF is working to determine if modeling of the performance of half height head shield is sufficient rather than actual physical testing of new bracket designs.

The locations at which physical test can occur are very limited. HM-144 is the rulemaking that started the requirement for half height head shields for pressure tank cars. One TCC member mentioned that one major factor driving a renewed interest in deciding if physical testing or modeling is the requirement to have at least half height head shields on the tank car built to transport crude oil. Currently, head shields on these cars are an AAR requirement not a DOT requirement for crude oil and ethanol cars. The task force will develop a proposal. T. Treichel agreed to research both the trapezoidal and conformed Half Height Head Shields (HHHS) accident data. Todd will also research the distribution of damage on HHHS.

TCC agreed to move this docket to the appropriate sub TCC docket.

At the January 2013 meeting, T. Treichel stated that historic information on this is available. The TF has met but has not yet reviewed the material available. Chris Edmonds will chair this TF.

At the April 2013 meeting, C. Edmonds stated that the TF has met several times and continues to work on language that would allow FEA analysis to be performed in lieu of an alternative to a physical test requirement. Half Height Head Shield (HHHS) identifier in the specification needs to be iron out to ensure that it is allowed.

Action Item: K. Dorsey will work with C. Edmonds on resolving this issue.

At the July 2013 meeting, K. Dorsey stated that it is currently possible to petition DOT for a special permit for relief from the physical testing requirement for head shields and head protection. The TF will work on the language that would allow modeling in lieu of the physical test requirements. Current federal regulations do not require head protection systems on DOT 111 tank cars except for aluminum construction. TF plans to pull the marking language out of the proposal.

Bracket mounting systems missing – AAR has received evidence showing bolts missing from the head shield on tank cars. Railroads and FRA agreed to provide AAR with car numbers and initials for those tank cars missing the bolts. Before creating a TF the extent of the issue will be evaluated to determine if a TF is actually needed.

CURRENT TF: C. Edmonds (Chair), K. Alexy, JP Gagnon, AD McKisic, J. Perez, F. Gonzalez

TF CHARGE: Evaluate and model the performance of half height head shields

REFERENCES:

Consider Requirements for Installation of Surge Suppression Devices

Recent Activity:
At the July 2013 meeting, TCC discussed whether or not the TF should establish a performance based standard process for how products are added to the list not requiring surge suppression devices.

Action Taken: The TCC agreed that a performance based standard process should be established to determine if a commodity should not require a surge suppression device. The TF chair will be Robyn from CI. The TCC agreed that the TF will work on establishing the processes and then the advisory task force will discuss how to implement it.

It has been recommended to the executive committee that the surge protection requirements on post 1994 rupture disk devices should be extended to pre 1994 cars. This would require all rupture disk devices to have surge protection on relief valves. The TF should recommend changes to paragraph A4.7.4 if necessary.

At the October 2012 meeting, K. Dorsey discussed the addition of acrylamide solution to the list of products exempt from the requirement of a surge suppression device. COD

At the January 2013 meeting, K. Dorsey stated that there are no further commodities being requested at this time to add to M-1002. Several members stated that it might be valuable to reference these commodities other than in M-1002.

At the April 2013 meeting, K. Dorsey asked if the process for how produces are added to the list not requiring surge suppression be determined by a performance based standard instead of tank car committee ballot.

Action Taken: Motion made, seconded, and passed to move this discussion to the executive TCC to determine if a taskforce should be established to determine the process that should be followed.

At the July 2013 meeting, TCC discussed whether or not the TF should establish a performance based standard process for how products are added to the list not requiring surge suppression devices.

Action Taken: The TCC agreed that a performance based standard process should be established to determine if a commodity should not require a surge suppression device. The TF chair will be Robyn from CI. The TCC agreed that the TF will work on establishing the processes and then the advisory task force will discuss how to implement it.

CURRENT TF: S Murray, L Hopper, F Reiner, H Weber
TF CHARGE:
ADVISORY TF: P. Student, H. Weber, A. Richter, K. Warner, K. Alexy, C. Akins, JP Gagnon, S. Murray.
ADVISORY TF CHARGE: Determine if a CPC should be published each time there is a product exempt from the requirement of a surge suppression device.
REFERENCES: F. Reiner 3/2/10; G Sandheinrich 6/9/10; L Loman 1/12/12

AFFTAC Thermal Model

Recent Activity:
At the July 2013 meeting, J. Sbragia stated that HLA was the third party contracted to validate the current AFFTAC model and the report should be out within the next few weeks. High fidelity modeling is what will be worked on next after the HLA study report is published.

At the October 2012 meeting, Dr. S. Runnels has completed a number of improvements to AFFTAC and more work is in progress. Improved tank steel failure modeling is in place, based on high-temperature tests done by the RSI-AAR Safety Project. Both the new PRV liquid flow data from FRA's tests and the new high-temperature steel performance test data have been incorporated into a new beta version. Validation against high-fidelity thermodynamic models is underway. Documentation is being compiled for the current beta version.

At the January 2013 meeting, J. Sbragia stated that Scott Runnels is working on the latest beta version. A new user manual is in draft form and being reviewed by the TF. Simulation program is being used to verify the AFFTAC model. The RSI and safety project would like to engage a third party company to validate the AFFTAC model specifically someone who has the resources to verify that the bugs are addressed.

At the April 2013 meeting, J. Sbragia stated that a new liquid flow model has been added to AFFTAC thermal model. The current official version of AFFTAC is the 2008 version. Validation of the current model is still underway and therefore cannot be the official version just yet.

At the July 2013 meeting, J. Sbragia stated that HLA was the third party contracted to validate the current AFFTAC model and the report should be out within the next few weeks. High fidelity modeling is what will be worked on next after the HLA study report is published.

CURRENT TF: J. Sbragia (Chr), G Booth, JP Gagnon, J Perez, M. Nunez

REFERENCES: TH Dalrymple 08/13/02, 4/12/04, 2/13/05, 4/21/06, 4/23/06, 4/24/06, 5/4/06X2, 5/6/06, 7/20/06, 4/3/07; JP Gagnon 9/25/03; SR Runnels 3/27/06, 5/1/06, 5/10/06, 4/2/07; T. Treichel 01/07/02, 9/26/03, 2/16/04, 11/11/04, 9/30/05, 3/27/06, 4/21/06; A Henzi 10/12/04, 10/13/04X2, 10/19/04X2, 4/13/05, 9/30/05, 5/8/06 5/31/06; M McGregor 4/25/05; H Weber 1/10/06; RG Portis 1/10/06; A Birk 4/24/06, July 2006

Review of the design and performance of Vacuum Relief Valves

Recent Activity:
At the July 2013 meeting, AAR was recently contacted by a car owner that stated they have had over 100 vacuum relief valve failures in crude oil service. Allegedly they are failing due to debris getting into the valve. When asked how and when this is occurring they stated that during the bottom outlet unloading event the facilities are using the vacuum relief valve as the air inlet. This is allowing debris into the valve which then affects its sealing capability.

Action Item: AAR will contact the vacuum relief manufactures to see if any root cause reports are available. This appears to be related to the offloading through the bottom outlet of petroleum crude oil.

This docket has been opened at the request of the NAR group and will be looking at the design and performance of Vacuum Relief Valves.

At the October 2012 meeting, COD pending publication of CPC

At the January 2013 meeting, K. Dorsey stated that dates within CPC-1250 need to be modified from 2012 to 2013. A revised CPC with the July 1, 2013 date shall be published.

At the April 2013 meeting, K. Dorsey stated that CPC-1251 corrected the dates published in CPC-1250. COD

At the July 2013 meeting, AAR was recently contacted by a car owner that stated they have had over 100 vacuum relief valve failures in crude oil service. Allegedly they are failing due to debris getting into the valve. When asked how and when this is occurring they stated that during the bottom outlet unloading event the facilities are using the vacuum relief valve as the air inlet. This is allowing debris into the valve which then affects its sealing capability.

Action Item: AAR will contact the vacuum relief manufactures to see if any root cause reports are available. This appears to be related to the offloading through the bottom outlet of petroleum crude oil.

CURRENT TF: J Perez (Chr), L Loman, R Jacob, M Clark, L Hopper, K Thurman, N Krzanowsky, T Dekoning, M Richardson

CHARGE: Review of the design and performance of Vacuum Relief Valves and make recommendations.

REFERENCES: J Perez 10/1/07, 3/4/08, 3/14/08, 4/3/08, 9/17.09, 1/8/10, 3/29/10; T. Mannas 9/2/08; T. Phemister 7/7/09, R Jachim 9/29/09

Effects of Environmental Harmonics on Safety Relief Devices

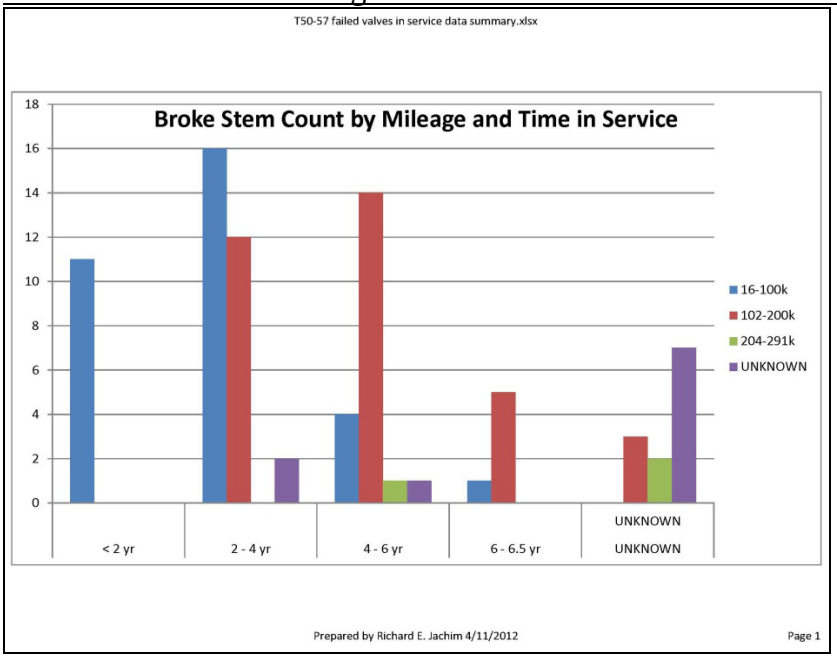
Recent Activity:
At the July 2013 meeting, J. Perez asked that R. Jachim be removed as TF chairman and replaced with John Shultz. At the time Susan Starks (previously with FRA) was to provide what FRA had on the subject. Phani Raj from FRA stated that the FRA does not have any information on the subject. Phani stated that OTMA records seem to imply that this might be product dependent, not just a harmonic issue. TCC members stated that it may not be as much product dependent as it may be volume related. So the committee would like FRA to also look at the volume when looking at the product.

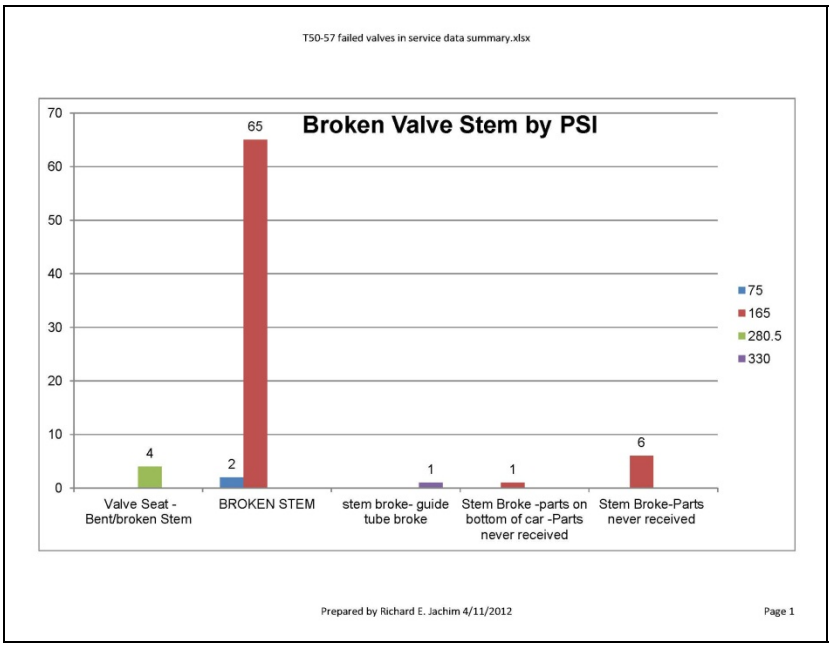
(Staff Note: Might want to modify the charge to include the failure of the stems due to not only harmonics but also volume of product and type of commodity. Might want to change the docket title to reflect the work of this Task Force since the charge has been changed.)

This docket was opened to investigate the effects of harmonics on safety relief devices. It has been noted that environmental harmonics can cause catastrophic failure of safety relief devices. The incidences were noted on 30,000 gallon tank cars.

At the October 2012 meeting, R. Jachim reported that the FRA over the road testing is complete and data is being compiled. Union Tank Car plans to have all the data analyzed by the January 2013 TCC meeting.

AAR received the following charts on this docket via email on R. Jachim on 10/10/2012





At the January 2013 meeting, the data has been given to the TF members to review. Remove Susan Starks from TF and add Karl Alexy.

At the April 2013 meeting, R. Jachim stated the data is still being analyzed. COD

At the July 2013 meeting, J. Perez asked that R. Jachim be removed as TF chairman and replaced with John Shultz. At the time Susan Starks (previously with FRA) was to provide what FRA had on the subject. Phani Raj from FRA stated that the FRA does not have any information on the subject. Phani stated that OTMA records seem to imply that this might be product dependent, not just a harmonic issue. TCC members stated that it may not be as much product dependent as it may be volume related. So the committee would like FRA to also look at the volume when looking at the product.

(Staff Note: Might want to modify the charge to include the failure of the stems due to not only harmonics but also volume of product and type of commodity. Might want to change the docket title to reflect the work of this Task Force since the charge has been changed.)

CURRENT TF: R. Jachim (Chair), D. Prince, B. Lacroix, T. Sisto, J. Fiori, AD McKisic, F. Gonzalez, K. Alexy, R. Simms, L. Loman

TF CHARGE: Collect, analyze and review data of field failures and determine commonalities. Review AAR current design requirements of Appendix A. Review current AAR design and testing requirements of safety valves in relation to recent in service failures, with a focus on vibration and harmonics effects from the operating service environment.

REFERENCES: R. Jachim 10/10/12;

Recent Activity:
At the July 2013 meeting, P. Student discussed the efforts ongoing in T1.1.4 which includes the section on service trial requirements of Chapter 1. The TF is considering limiting the number of equipment that can be placed on a service trial unless authorized by the AAR. New manufacturers of tank car are entering the industry and there is discussion by the TF that a service trial should be considered. RSI stated that the discussions around service trial for tank cars should be handled directly by TF chairman P. Student and the AAR and not handled by the TF.

At the October 2012 meeting, K. Dorsey summarized the current service trials. AAR continues to work with proponents to on requirement to provide reports and/or teardowns when ready. Reports have been provided since the July 2012 TCC meeting and the table has been update accordingly.

At the January 2013 meeting, K. Dorsey reported on the table provided in the docket. There are some intermodal valve manufactures interested in getting into tank car valves. A question was asked on how many valves could be put on a service trial. There is no limit on the number of valves that can be placed on a service trial.

At the April 2013 meeting, K. Dorsey stated that T1.1.4 TF is working on the service trial process.

At the July 2013 meeting, P. Student discussed the efforts ongoing in T1.1.4 which includes the section on service trial requirements of Chapter 1. The TF is considering limiting the number of equipment that can be placed on a service trial unless authorized by the AAR. New manufacturers of tank car are entering the industry and there is discussion by the TF that a service trial should be considered. RSI stated that the discussions around service trial for tank cars should be handled directly by TF chairman P. Student and the AAR and not handled by the TF.

Service Trials

SERVICE TRIAL	PROPONENT	APPL. NO.	CARS	DEVICE DESCRIPTION	COMMODITY	AAR APPROVED FOR SERVICE TRIAL DATE	DATE APPLIED	LAST REPORT	REMARKS
421	Engineered Controls	PRD129511		300/330 PRD	NH3			9/24/13	Was PRD-039009A
433	Engineered Controls	PRD099018		280.5 PRD	AA			9/24/2013	Request for Final Tear Down 12.3.2012
434	Engineered Controls	E099019		2-3” Valve	AA			9/24/2013	Request for Final Tear Down 12.3.2012
437	Midland MFG	E102010		2" Angle Valve	AA			5/6/2013	
	Midland MFG	E102011		3" Check Valve	AA			5/6/2013	
	Midland MFG	PRD102012		PRD A-1403 and A1406 Series				5/6/2013	
438	Kelso Technologies Inc.	PRD109022		PRD	Initial Ethanol along with DOT 173 authorized products		11/17/11	4/3/2013	
439	Kelso Technologies Inc.	E119023		Manway Application			8/16/11	9/3/2013	
443	Union Tank Car Company	E-127036		Non Pressure Car Manway Cover	General Purpose	2/1/2013			

REFERENCES:

Recent Activity:
At the July 2013 meeting, the RSI-AAR research program update was provided by T. Treichel (handout provided). The FRA research project update was provided by F. Gonzalez. The TC/TDG research project update was provided by S. Garneau. Highlights of each report are provided below.

RSI-AAR Research program
T. Treichel provided updates on the AFFTAC Thermal Model (T50.49), Tank Car Reliability Research (T59.2), update and expansion of RA-05-02 report on Condition Probabilities of Release (CPR), and Tank Car Accident Damage Data. Below are the details:

At the October 2012 meeting, the RSI-AAR research program update was provided by T. Treichel (handout provided). The FRA research project update was provided by F. Gonzalez via PowerPoint. The TC/TDG research project update was provided by JP Gagnon (handout provided). Paul Stancil provided an update on NTSB activities.

RSI-AAR research program update:

AFFTAC Thermal Model (T50.49)
Dr. Scott Runnels has completed a number of improvements to AFFTAC and more work is in progress. Improved tank steel failure modeling is in place, based on high-temperature tests done by the RSI-AAR Safety Project. Both the new PRV liquid flow data from FRA's tests and the new high-temperature steel performance test data have been incorporated into a new beta version. Validation against high-fidelity thermodynamic models is underway. Documentation is being compiled for the current beta version.

Tank Car Reliability Research (T59.2)
SS-3 Database: As of 9/30/12, the SS-3 database contained records on 206,754 inspections. 13,711 cars were added since July 1. FRA has funded the development of a new data collection program, the Tank Car Integrated Database (TCID), which will replace SS-3, R-1 and R-2 reporting requirements with one web-based portal. Sims Professional Engineers has created the new system, and will maintain it and provide user support via funding from the RSI-AAR Safety Project. Beta testing is complete, and a last few adjustments are being made. A Circular Letter containing instructions for submission of data is being prepared. SS-3 data collection continues until the new TCID program is implemented industry-wide.

Thermal Protection Research & Modeling (T65.8)
Transport Canada, FRA and the Tank Car Safety Project have conducted tests related to the effects of high temperatures on tank behavior. The results of three sets of tests on high temperature steel failure, tank and jacket steel emissivity, and liquid flow through pressure relief valves, have now been incorporated into the AFFTAC fire model as mentioned above. FRA is planning fire tests of small tanks with total containment in 2012. Additional tasks are being prioritized by the T65.8 task force.

Update and Expansion of RA-05-02 Report on Conditional Probabilities of Release
The RSI-AAR Tank Car Safety Project is updating and expanding upon Report RA-05-02 from 2006, which provided estimates of the conditional probability of release (CPR) for a wide variety of car specifications and configurations. The new estimates will be more accurate for cars in the current and near future fleets, and the expanded scope will also support potential Advanced Tank Car Collaborative Research Project (ATCCRP) tasks designed to create tools to predict the performance of designs that do not yet exist in the fleet. The team is developing regression models that include all the variables of interest and will capture their influence accurately. Analysis is underway, to be completed by the end of the year.

Tank Car Accident Damage Data
Recently, the Project's accident data are being used to develop an analysis of bottom fitting protection performance for the T10.7.5 task force. The revision of Report RA-05-02 mentioned above is using the accident data. Help with all data requests made by Sims Professional Engineers on behalf of the Tank Car Safety Project is invaluable to providing the best data on tank car safety, and is much appreciated.

TD/TDG research project update:
At the October 2012 meeting, JP Gagnon summarized the research efforts which were included in the docket. Available upon request is the investigation of multiple tank car rollover derailments related to double shelf couplers and its solutions.

Canadian Crude Quality Technical Association is reviewing the methods current used to determine the levels of H2S in Crude Oil. Once review is complete they will write a report. JP mentioned that through his involvement in this effort it has become apparent that H2S levels vary in both sour and sweet crude oil. Re-classification of crude oil could take place if it is determined that it meets a different class of hazardous material (i.e. TIH).

JP mentioned that an equivalence certification has been granted to CN on LNG in a tank car being used as a tender.

FRA research project update:
F. Gonzalez stated that the 2013 budget for FRA has been cut by 10%. F. Gonzalez provided the FRA research project update via PowerPoint presentation. The purpose of FRA research projects are to investigation ways to improve tank cars transporting hazardous materials. F. Gonzalez summarized the current FRA research projects provided in the docket.

Top Fittings Protection project is in phase III. The upcoming test on November 8, 2012 will include a 9mph roll over. Instrumentation will measure the forces and deflections seen by the fittings, local tank shell, and protective structure.

Another project is the risk evaluation of the transportation of tank cars carrying hazardous materials. Allen Bing and Booze Allen work on this effort. The goal is to have this report finalized by the end of the year. Scope of work includes a three stage approach (baseline evaluation, followed by analysis, and then a recommendation). The study will look at accident frequency and the likelihood that a car will be derailed in an accident. The hazmat transportation risk were modeled as a chain of events starting with a train accident and ending with the point of the hazmat release (train accident, cars damaged or derailed, damage or derailed tank car contains hazmat, tank car releases of hazmat).

Risk Analysis findings:

the highest counts for accidents, derailments, and hazmat releases all occur on the higher track classes (class 4 and 5); however the highest rates occur at the lower track classes (class 1, 2, and 3).

FRA stated that PTC provides only limited risk reduction because the vast majority of freight train accidents are caused by non-PTC-preventable track and equipment defects. PTC has a 6.7% accident reduction, 5.1% car derailment reduction

FRA stated that ECP brakes 5.3% accident reduction, 5.1% car derailment reduction

65% of freight train accident and 74% of freight train derailments are due to track and wheel defects.

Industry asked what deliverables are expected in the final report. FRA responded with: the probability of an accident, probability of damage, and probability of release.

TWP-14 – Analysis of Different Impactor Threats and Impact Conditions: Analysis of different size impactors, analysis of real world impactors (different sizes and shapes), analysis of real world impacts performed a variety of analyses on oblique and off center impacts, and analysis of real world threats (DHS solution for security)

TWP-15 Development of performance based testing requirements for railroad tank cars: develop performance based standardization methodology for qualifying the puncture resistance of tank car design (head and shell). A combination of modeling, component testing, and model validation is being investigated to determine the best method for quantify structure performance.

Total containment fire test – both small scale and medium scale testing. Received two proposals, the proposals cost were too high to do all at once so the RFP will be broken down in segments so that the work can continue based on the limited resources presently available.

LNG Locomotive – Natural Gas Locomotive Technology Workshop was offer recently in Chicago, IL sponsored by FRA and Argonne Laboratories. From the workshop FRA identified the safety, fuel, and standard aspects of this effort.

http://www.fra.dot.gov/rpd/policy/2108.shtm is the location of FRA hazmat reports. NGRTC is available and ATCCRP coming soon.

NSTB

P. Stancil reported on the current NTSB recommendations. NTSB recognizes and appreciates the effort of the TF looking at bottom outlet performance.

Tiskilwa, IL Derailment, October 2011: The technical draft is under review and is expected to be completed by November 2012 and finalized in 2013. Laboratory work has been completed on tank shell analysis.

Columbus, OH Derailment, July 2012: P. Stancil stated that 3 ethanol tank cars breached in this derailment. NTSB is currently examining the tank car steels and once complete a draft investigation report will commence. The expected completion of this report is October 2013.

A TCC member asked NTSB if they are looking into the chemical characteristics of the denatured ethanol that is being shipped and are they aware of how the flashpoint can change based on the denaturant. NSTB stated they have heard of this and at this point in time unsure if it is being reviewed.

At the January 2013 meeting, the RSI-AAR research program update was provided by T. Treichel (handout provided). The FRA research project update was provided by F. Gonzalez via PowerPoint. The TC/TDG research project update was provided by JP Gagnon (handout provided).

RSI-AAR research program update:

AFFTAC Thermal Model (T50.49)

Dr. Scott Runnels has completed a number of improvements to AFFTAC and more work is in progress. Improved tank steel failure modeling is in place, based on high-temperature tests done by the RSI-AAR Safety Project. Both the new PRV liquid flow data from FRA's tests and the new high-temperature steel performance test data have been incorporated into a new beta version. Validation against high-fidelity thermodynamic models is underway. Documentation is being compiled for the current beta version.

Tank Car Reliability Research (T59.2)

SS-3 Database: As of 12/31/12, the SS-3 database contained records on 209,479 inspections. 2,725 cars were added since October 1. FRA has funded the development of a new data collection program, the Tank Car Integrated Database (TCID), which will replace SS-3, R-1 and R-2 reporting requirements with one web-based portal. Sims Professional Engineers has created the new system, and will maintain it and provide user support via funding from the RSI-AAR Safety Project. Beta testing is complete, and a last few adjustments are being made. A Circular Letter containing instructions for submission of data is being prepared. Batch upload of data is also being tested. SS-3 data collection continues until the new TCID program is implemented industry-wide.

Update and Expansion of RA-05-02 Report on Conditional Probabilities of Release
The RSI-AAR Tank Car Safety Project, under the auspices of the Advanced Tank Car Collaborative Research Project (ATCCRP), is updating and expanding upon Report RA-05-02 from 2006, which provided estimates of the conditional probability of release (CPR) for a wide variety of car specifications and configurations. The new estimates will be more accurate for cars in the current and near future fleets, and the expanded scope will also support other ATCCRP tasks designed to create tools to predict the performance of designs that do not yet exist in the fleet. The team is developing regression models that include all the variables of interest and will capture their influence accurately. Analysis is to be completed by the end of 1st quarter 2013.

Tank Car Accident Damage Data
Recently, the Project's accident data have been used to develop an analysis of bottom fitting protection performance for the T10.7.5 task force, and to assess the performance of half-height head shields relative to full-height head shields. The revision of Report RA-05-02 mentioned above is using the accident data. Help with all data requests made by Sims Professional Engineers on behalf of the Tank Car Safety Project is invaluable to providing the best data on tank car safety, and is much appreciated.

FRA research project update:
F. Gonzalez provided the FRA research project update via PowerPoint presentation. The purpose of FRA research projects are to investigation ways to improve tank cars transporting hazardous materials. F. Gonzalez summarized the current FRA research projects provided in the docket.

Top Fittings Protection project is in phase III. Roll over test occurred on November 8, 2012 which included a 9mph roll over. Instrumentation measured the forces and deflections seen by the fittings, local tank shell, and protective structure.

Risk evaluation of the transportation of tank cars carrying hazardous materials: The study will look at accident frequency and the likelihood that a car will be derailed in an accident. The hazmat transportation risk were modeled as a chain of events starting with a train accident and ending with the point of the hazmat release (train accident, cars damaged or derailed, damage or derailed tank car contains hazmat, tank car releases of hazmat). Draft report was sent to certain stakeholders seeking comments. Comments were received and are being addressed. Once all comments are addressed a presentation will be provided to industry explaining the base line study.

TWP-15 Development of performance based testing requirements for railroad tank cars: develop performance based standardization methodology for qualifying the puncture resistance of tank car design (head and shell). A combination of modeling, component testing, and model validation is being investigated to determine the best method for quantify structure performance.

TD/TDG research project update:
Stephane Garneau from TC provided an update on the research table provided in the background.

At the April 2013 meeting, the RSI-AAR research program update was provided by T. Treichel (handout provided). The FRA research project update was provided by F. Gonzalez via PowerPoint. The TC/TDG research project update was provided by S. Garneau. Highlights of each report are provided below.

RSI-AAR Research program
T. Treichel provided updates on the AFFTAC Thermal Model, Tank Car Reliability Research, update and expansion of RA-05-02 report on Condition Probabilities of Release (CPR), and Tank Car Accident Damage Data.

FRA Research
F. Gonzalez stated that the research project funding was cut by 10%. The risk evaluation of the transportation of tank cars carrying hazardous materials report is under final review. The impactor analysis report (report #: DOT/FRA/ORD-13/17) has been published and is available on the website. All other reports are now available on the following link: http://www.fra.dot.gov/Page/P0151

During the meeting Sharma & Associates provided a PowerPoint presentation on Full Scale Impact Test of Tank Car fittings. Chlorine car with top fittings protection was used in the test with a target impact rollover speed of 9mph. the car was filled with water at 2% outage.

TC/TDG research project
Stephane Garneau provided update on behalf of Barbara Dibacco. TC is studying the toxicity of Sour Crude to determine what criteria should be used to determine the products classification. Preliminary results show that it will not affect the type of package but it would lead a shipper to determine how to assign the proper shipping name and identification number. Due to limited resources Stephane may not be able to attend every TCC meeting.

At the July 2013 meeting, the RSI-AAR research program update was provided by T. Treichel (handout provided). The FRA research project update was provided by F. Gonzalez. The TC/TDG research project update was provided by S. Garneau. Highlights of each report are provided below.

RSI-AAR Research program
T. Treichel provided updates on the AFFTAC Thermal Model (T50.49), Tank Car Reliability Research (T59.2), update and expansion of RA-05-02 report on Condition Probabilities of Release (CPR), and Tank Car Accident Damage Data. Below are the details:

AFFTAC Thermal Model (T50.49)
Dr. Scott Runnels has completed a number of improvements to AFFTAC and more work is in progress. Validation against high-fidelity thermodynamic models is underway. **A third-party independent review has been completed and a final report is expected by the time of this meeting**.

Tank Car Reliability Research (T59.2)

SS-3 Database: As of 6/30/13, the SS-3 database contained records on 216,306 inspections. 3,248 cars were added since April 1. FRA has funded the development of a new data collection program, the Tank Car Integrated Database (TCID), which will replace SS-3, R-1 and R-2 reporting requirements with one web-based portal. Sims Professional Engineers has created the new system, and will maintain it and provide user support via funding from the RSI-AAR Safety Project. Beta testing is complete, and a last few adjustments are being made. **A Circular Letter announcing an official start-up date of 1/1/14 was issued. However, data can be entered now**. Batch upload of data is also being tested. SS-3 data collection continues until the new TCID program is implemented industry-wide.

Update and Expansion of RA-05-02 Report on Conditional Probabilities of Release

The RSI-AAR Tank Car Safety Project, under the auspices of the Advanced Tank Car Collaborative Research Project (ATCCRP), is updating and expanding upon Report RA-05-02 from 2006, which provided estimates of the conditional probability of release (CPR) for a wide variety of car specifications and configurations. The new estimates will be more accurate for cars in the current and near future fleets, and the expanded scope will also support other ATCCRP tasks designed to create tools to predict the performance of designs that do not yet exist in the fleet. The team is developing regression models that include all the variables of interest and will capture their influence accurately. **Analysis is largely completed, although results are still being tested for accuracy and consistency**.

Tank Car Accident Damage Data

The revision of Report RA-05-02 mentioned above is using the accident data. Bottom fittings and head shields have been the subjects of recent analyses as well. Help with all data requests made by Sims Professional Engineers on behalf of the Tank Car Safety Project is invaluable to providing the best data on tank car safety, and is much appreciated.

FRA Research

F. Gonzalez reported on the following:

1. FRA continues the effort to perform further testing on the test panels of the POD Study.
2. The tank car environmental study with Ensco is in the process of changing the contract to collect additional environmental data. The data to be collected will be determined first and then the appropriate electronic equipment will be determined.
3. Hazmat risk assessment – comments within FRA have been sent to Allen Bing and he is working on addressing these within the next few weeks.
4. Evaluation of Loading and Unloading Operations for Molten Sulphur Rail Tank Cars – FRA is working with the Sulphur Institute on this activity. Harold Weber stated they have received information from NS on this subject. FRA is looking into loading and unloading best practices for flammable liquids in cooperation with the RFA.
5. FRA stated that they are interested in funding an effort to update the Pamphlet 34 Video. AAR will address this with the Hazmat Committee in August.
6. Development of performance based testing required for railroad tank cars – FRA is asking industry if anyone has a tank car they can donate for the this testing would be appreciated. The preferred tank cars are in this order DOT113, DOT112, DOT105, any car transporting ethylene oxide, pressure car, and then DOT111. FRA provided this detail via email to AAR and AAR has sent this out to the TCC.

7. FRA stated that OTMA data has shown stem failures primarily in ethanol and alcohols n.o.s. service. The thesis is that the initial crack is due to electro chemical reaction between the commodity and the operating parts of the valve. Evaluation of this work continues.

TC/TDG research project

Stephane Garneau stated that the coupler project final report should be published by end of summer. The effort continues on the proper classification of sour crude.

REFERENCES: T Treichel 4/09/04, 4/16/04, 7/18/04, 9/30/04X2, 10/22/04 (handout), 1/19/05 (handout), 4/20/05 (handout), 7/21/05 (handout), 10/19/05 (handout), 1/13/06, 4/19/06 (handout) , 7/18/06 (handout), 1/17/07 (handout), 4/18/07 (handout), 7/18/07 (handout), 10/11/07 (handout), 1/23/08 (handout), 7/116/08 (handout); 07/2011 (handout), 10/2011 (handout), D Dibble 3/22/05, 3/23/06, 7/6/06, 3/16/2012; F. Gonzalez 7/7/06, 1/17/07 (handout), 1/25/07, 7/18/07 (handout), 9/19/08, 4/2/12; JP Gagnon 9/29/08; B. DiBacco 3/22/12

FRA Research Projects – July 2013
(AAR received via email 7/9/2013 from F. Gonzalez)

Project Title	Abstract	Sponsor(s)	Dockets	Contractor(s)	Completion Target	Status
Railroad Tank Car Nondestructive Methods Evaluation	Evaluation and validation of nondestructive evaluation methods for use on tank cars and the quantification of the NDE process to improve the probability of defect detection.	FRA		AAR TTCI	Ongoing review of other procedures.	**Draft report under review. Contract in place for New Phase. Finishing details.**
Non-pressure tank car fittings protection	Current research on more robust concepts that could protect fittings in more severe accident scenarios. These concepts include: -Recession of the fittings arrangements down below the tank top shell surface; & Using deflective geometry through a structural roll bar arrangement or a fabricated skid welded through pads to protect the fittings. Initial simulations of these concepts indicate that they provide more significant protection, especially at higher speeds.	FRA	(Note: Results to be shared with TCC)	Sharma Associates	Phase II Completed. Working on Phase III	**Report is under final review.**
Tank Car Environment Study	The main goal of this project is to have the instrumented tank car couple with the FRA's T16 high-speed research vehicle and record the track geometry and train handling along with the trainloads to have a complete picture of the environment.	FRA	(Note: Results to be shared with TCC)	ENSCO	Ongoing	**Ongoing Phase II ongoing. New person in FRA to review the problem. Tasks modified to accommodate low cost device**
Hazmat Risk Assessment	Develop a rail hazmat transportation risk model and associated risk metrics. Tasks: 1.-Estimate base case (2008) rail hazmat transportation risk. 2.-Estimate risk reduction after implementation of safety requirements enacted in 2008/9, individually and in combination 3.-Identify and evaluate further opportunities for risk reduction	FRA		ICF, Booz Alan, ENSCO	August 2013	**Meeting with Alan and changing the report according to the comments.**
Evaluation of different size impactors	The purpose of this task is to evaluate the puncture behaviors of tanks under a more general range of impact conditions and will help to better understand the damaged caused by the different impactors on different tank cars and should provide us with conclusions/recommendations for performance tests for tank head and shell for each impactor.	FRA		ARA	Completed	**Final Report published. DOT/FRA/ORD-13/17** http://www.fra.dot.gov/eLib/details/L04420

Project Title	Abstract	Sponsor(s)	Dockets	Contractor(s)	Completion Target	Status
Evaluation of Loading and Unloading Operations for Molten Sulphur Rail Tank Cars	The FRA wants to work with The Sulphur Institute and with industry to reduce these occurrences of solid sulphur residue on molten sulphur rail tank cars.	FRA		TSI	December 2013	**Phase I and II under way**
Small Scale fire testing	Demonstrate by scaled testing that in rail tank cars loaded with Sodium Hydroxide solution (NaOH) or Potassium Hydroxide solution (KOH) solutions and not equipped with a PRD can survive a minimum of 100 minutes in a pool fire without rupture or otherwise release any lading.	FRA		Sharma & Associates, Dr. Burke, The Chlorine Institute.	April 2015	**Meeting with contractor. Awaiting modification of test procedures and protocol**
DEVELOPMENT OF PERFORMANCED-BASED TESTING REQUIREMENTS FOR RAILROAD TANK CARS	The Government regulatory agencies in the United States and Canada want to manage, conduct and support research to establish performance-based testing requirements and to develop methods to evaluate the crashworthiness and structural integrity of different tank car designs.	FRA/TC		VOLPE, Sharma & Associates, TTC		**First Phase underway with VOLPE, Had first meeting and in the process to detail first test in November.**
Evaluating the effects of Environmental Factors on PRV Performance	Docket # T88.8 concluded that errors up to ± 15 % were possible in the measurement of the STD pressure of PRV's due to the inaccuracies in the gages used. This was due to the influence of several environmental factors on the gages and human error in reading the numbers off the gages. **The objective of the work** is to evaluate, quantitatively, the deviations caused by environmental factors (in affecting the measuring instrument, namely, the pressure gage) in measuring the STD and to determine whether this error is as large as suggested by the TCC.	FRA /Midland Manufacturing	T88.8	VOLPE	April 2014	**Identify shops that can help us do the test. Midland will ship the valves late July**
Full scale Crash test of tank cars	Conduct four tank car crash tests in a period of two years. The specimens will be four different specification tank cars	FRA		TTC	September 2015	**Contract under way. Asked the committee to donate tank cars (113, 112, Ethylene oxide, and 111)**

Contact:
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Office of Research and Development

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RSI-AAR Research Projects – October 2013
(AAR received via email on 6/30/2013 from T. Treichel)

Project Title	Abstract	Sponsor(s)	Dockets	Contractors	Completion Target	Status
AFFTAC thermal model improvements	A variety of upgrades being made to the model will improve its use as a research tool and a planning tool for future fire tests.	RSI-AAR	T50.49	Scott Runnels Associates	Various	Validation against high-fidelity models continues. Updated documentation being developed. Third party review completed, awaiting report.
Development of new Tank Car Integrated Database (TCID)	FRA is funding the development. The RSI-AAR Safety Project has added funds to import SS-2/SS-3 data and replace paper R-1 and R-2 forms. The Safety Project will fund the ongoing data collection process.	FRA and RSI-AAR	T59.2	Sims Professional Engineers	Development complete.	Batch upload process for large fleet owners being refined. Full implementation to begin1/1/14.
Update and expand study of conditional probabilities of release	In 2012 the RSI-AAR Safety Project will replace its Report RA-05-02 with an updated study incorporating a broader group of variables pertinent to tank car accident performance	RSI-AAR	n/a	U. of Illinois at Urbana-Champaign	Analysis done; final report publication November	Statistical modeling complete. Results being reviewed. Report writing underway .

Contact:

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Transport Canada – Research update – January 2013
(AAR received via email on 10/1/2012 from B. DiBacco)

Project Title	Abstract	*Sponsor*	Contractor	Target	Status
Thermal protection analysis for the Next Generation Tank Car	Determine the thermal behavior of multi layered foam and steel jacket systems and compare against Federal fire test requirements for thermal protection.	TC	A.M. Birk Engineering	Completed	Final report is in publication process.
Tank Car Thermal Protection Fire Tests: Emissivity	The goal is to obtain a better understanding of the models and parameters to be used in programs such as AFFTAC when describing the heat transfer phenomena taking place in the vapor space of a tank car during a fire. **Phase 1** concentrated on measuring LPG tank and jacket steel emissivity. **Phase 2** involved validating the results of Phase 1 and measuring tank and jacket steel emissivity at elevated temperatures.	TC	National Research Council of Canada (NRC)	Completed	Final report is in publication process – available upon request.
Domino Effect - Multiple tank car rollover derailments Phases 1 and 2	The objective is to examine and determine effective solutions to reduce coupler-associated multiple tank car rollover derailments. Phase 1 includes: • a literature review of accident reports to look at the involvement of both empty and full tank cars in this phenomenon; • a theoretical analysis of potential derailment mechanisms; • discussion on potential solutions. Phase 2 includes: • Energy analysis calculations • 3 Full-scale rollover tests – 1 baseline with standard couplers and 2 tests using a rotary double-shelf coupler connection • Test data analysis	TC	National Research Council of Canada (NRC)	Fall 2012	Phase 1 is completed - final report is available upon request. Phase 2 is completed – report has been finalized. Final project report (phases 1 and 2) will be published together in Spring 2012.
Assessing the Toxicity Risks of the Transport of Petroleum Sour Crude Oil	TC is working with the Canadian Crude Quality Technical Association (CCQTA) on two projects: 1. Develop a standardized, practical method to measure H2S concentration in crude oil samples. http://www.ccqta.com/methods.php?analytical_id=8 2. Develop a computer model and nomographs that can be used by field operators to estimate the concentration of H2S gas that evolves into the vapour space of a transportation container under equilibrium conditions. Validate the computer model through lab testing of crude oil samples under set conditions. Future work by TC: clarification of classification requirements for crude oil in the TDG Regulations.	TC / CCQTA	Projects 1 and 2: Canadian Crude Technical Quality Association (CCQTA)	Spring/Summer 2013	**Project 1:** Final report is available. http://www.ccqta.com/files/H2Smeasurementreport_final.pdf **Project 2:** Final report will be available once model validation work is completed (likely Spring 2013). **Validation work:** In-progress. **Classification work:** TDG has begun a review of classification options.

TC/TDG Rail Technical Research Reports
More information on some of these projects is available at:
http://www.tc.gc.ca/eng/innovation/tdc-projects-dgoods-menu.htm
or as listed below.

Report Number	Report Title
	Tank Car Impact Analysis
	Tank Car Stub Sill Analysis, Executive Summary, National Research Council (NRC), Centre for Surface Transportation Technology, December 1996
TP 13062	Dynamic Structural Characterization of Stub Sill Tank Cars Utilizing ADAMS & ANSYS Simulation Models: Report 1 - The ADAMS System Dynamic Model - Its Validation and Application to the Characterization of Impact Forces, NCR, March 1997 Report 2 - ANSYS Finite Element Modeling - Its Validation & Application to the Characterization of Impact Forces, NRC, March 1997
TP 13063	Tank Car Derailment Analysis, NRC, March 1997
TP 13192E	Transport Canada Multi Tank Car Impact Tests And Analysis Report 1 - Yard Impact Testing, NRC, March 1998
TP 13359E	Multi Tank Car Impact Tests & Analysis Report 3 - ADAMS Model Simulations of Tank Car Impact, NRC, October 1998
TP 14122E	Low Cycle High Load Tank Car Impact Tests, NRC, December 2003
TP 14139E	Low Temperature Impact Effect on Tank Cars, Southwest Research Institute/National Research Council Canada, April 2003.
	BLEVE Tests/Video
TP 12498E	Fire Tests of Propane Tanks to Study BLEVEs & Other Thermal Ruptures: Detailed Analysis of Medium Scale Test Results, Queen's University, November 1997
TP 13649E-3 Now available online	BLEVE: Response and Prevention (DVD) – available for viewing or ordering at: http://shop.tc.gc.ca/TChtml/ibeCCtpItmDspRte.jsp?item=66083&language=US
	Pressure Relief Valve Testing
TP 12978E	Evaluation of Dangerous Goods Pressure Relief Valve Performance Phase 2 - Air Test Results Addendum - C312-1 Series Results & Analysis, Queen's University, December 1997
TP 13088E	Evaluation of Dangerous Goods Pressure Relief Valve Performance Phase 2 - Steam-Based Tests: Preliminary Results, Queen's University, December 1997
TP 13259E	Evaluation of Dangerous Goods Pressure Relief Valve Performance Phase 2 - Small Vessel PRV Tests, Queen's University, April 1998
TP 13376E	Evaluation of Dangerous Goods Pressure Relief Valve Performance Phase 2 - 2" and 3" NPT Tanker Truck PRV Tests, Queen's University, January 1999
TP 13377E	Evaluation of Dangerous Goods Pressure Relief Valve Performance Phase 2 - Two-Phase Energy Storage Study Preliminary Results, Queen's University, February 1999
TP 14045E	PRV Field Trials – The Effects of Fire Conditions and PRV Blowdown on Propane Tank Survivability in a Fire, Queen's University, January 2003.
	Tank Car Thermal Protection Analysis
TP 13203E	Thermographic Inspection of Tank Car Thermal Insulation, A.M. Birk Engineering, March 1998
TP 13518E	Tank-Car Insulation Defect Assessment Criteria: Thermal Analysis of Defects, A.M. Birk Engineering, March 2000.
TP 13539E	Review of AFFTAC Thermal Model, A.M. Birk Engineering, January 2000.
TP 14066E	Burner Tests on Defective Thermal Protection Systems, Queen's University, Department of Mechanical Engineering, 2003.
TP 14356E	High temperature stress-rupture tests of sample tank-car steels, Queen's University, December 2004.
TP 14357E	Computational fluid dynamics analysis of local heating of propane tanks, Queen's University, December 2004.
TP 14366E	Tank-car thermal protection defect assessment: fire tests of 500-gallon tanks with thermal protection defects, Queen's University, March 2005.
TP 14367E	Tank-car thermal protection defect assessment: Updated thermal modelling with results of fire testing – Summary report, A.M. Birk Engineering, March 2005.
TP 14368E	Thermal model upgrade for the analysis of defective thermal protection systems, A.M. Birk Engineering, January 2005.
TP 14561E	Fire testing and computer modelling of rail tank-cars engulfed in fires: Literature review, A.M. Birk Engineering, March 2006.
TP 14631E	Detailed Plan and Design for Full-Scale Fire Tests of Thermally Protected 112J-Type Rail Tank Cars, Queen's University, November 2006.
	Tank Container Impact Standard Development
TP 13127E	Development of a Tank Container Impact Test Standard, TES & NRC, November 1997.
TP 13307E	Tank Container Impact Standard, Phase II Report, NRC, September 1998.

	B. Miscellaneous
TP 14690E	Evaluation of Risk Associated with Stationary Dangerous Goods Railway Cars, Transys Research Ltd, March 2007.
Available upon request	Investigation of Multiple Tank Car Rollover Derailments Related to Double Shelf Couplers and its Solutions, Centre for Surface Transportation Technology of National Research Council Canada, March 2009.
Available upon request	"The Last Resort – Vent and Burn" DVD - TDG Highway Tank Vent and Burn Project
N/A	Canadian Crude Quality Technical Association - H2S in Crude Measurement Report http://www.ccqta.com/methods.php?analytical_id=8

Contact for information or a report copy:

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Recent Activity:
At the April 2013 meeting, Stephane Garneau provided an updates on TC/TDGR activities. P. Raj provided an update on FRA activities. L. Majors provided an update on PHMSA activities.

At the October 2012 meeting, JP Gagnon provided an updates on TC/TDGR activities (handout provided). K. Alexy provided an update on FRA activities via PowerPoint. L. Majors provided an update on PHMSA activities.

TC/TDG

JP summarized the next steps involved with replacement of the CGSB standard by an in house Transport Canada Standard, which will subsequently be adopted by reference in the TDG regulations. A revised draft version of the document will be sent to stakeholders in early December 2012 in preparation for a meeting to take place in Ottawa either the second or fourth week in January 2013. The purpose of the meeting will be to review the document and discuss proposed new changes since 2009, among which incorporate the stub sill inspection requirements, widening the 286,000 GRL allowances for tank cars, provide allowance for one time movement of non-conforming tank cars and ton containers for situations or under conditions that present low risk, incorporation of new requirements for Packing Group I and II commodities as per the AAR petition, tank car attachments, insulation system performance and outage limits, tolerance for solidified residue on external services, liquefied natural gas transportation in tank cars.

Temporary Certificates (similar to FRA movement approvals) – approximately 215 issued in 36 months. These temporary certificates are allowed under the new TDG act but there must be in the public interest to receive approval. Temporary certificates authorize an activity to be carried out in a manner that does not comply with this the TDG Act. Repairing on site is definitely preferred and encouraged.

TDG Directorate Re-Organization:

Federal Government workforce adjustment initiative was discussed by JP.
Engineering Services of TDG Regulatory Affairs Group severely affected:
1 – Chief of Engineering Services position disappearing: Zenon Lewycky
2 – Two of 4 senior engineering positions disappearing: Superintendents of railway tank cars and Highway tanks retiring after March 1 2013: JP Gagnon and Kevin Green
Remaining two superintendents and existing support staff will cover the 4 functions as follows:
Pascal Verville: Cylinders and Highway tanks
Stephane Garneau: Packaging and Rail and Tank car matters

FRA

Personnel Update

Jo Strang – Associate Administrator for Railroad Safety/Chief Safety Officer
Bob Lauby – Deputy Associate administrator for regulatory and legislative operations
Ron Hynes – Director for the Office of Safety Assurance and Compliance
Bonnie Murphy – Deputy Associate Administrator for Safety and Compliance and Program Implementation

HM Staff:
Staff director – Karl Alexy
Interviewing for an engineer position
Specialist – Richard Tarr returned to PHMSA
Temporary – Victoria Hieghtman

OTMA
Karl Alexy summarized the history of OTMA's.
1985 – Tank cars only, no approval language
1996 – Approval language for tank cars only
2000 – Expanded approval language to cover all bulk packagings
January 31, 2012 – HMG-127
March 27, 2012 – HMG-127 Rev 1

New revision to HMG-127 is expected to be published soon. Within the new revision OTMA-1's are the catch-all not OTMA-3's. If it is not specifically address under OTMA-2 or OTMA-3 then it will need an OTMA-1. If you have a NAR, it is under the discretion of the FRA HM Specialist at FRA Headquarters. OTMA-3's are for standing approvals and when FRA is notified of such movement the applicant will not have to wait for a response before the package can be moved. The requirement will allow the applicant to move under OTMA-3 as long as the applicant notifies FRA first.

Data:
Number of NAR's to date: 583 NARs
Number of OTMA's to date: 1716
Categories of OTMA issued: (2012 categories 52% OTMA-1, 36% OTMA-3, and 12% OTMA-2)
Defects: Largest amount of OTMA's relate to bottom outlets, followed by liquid line, manway, and PRD's.
Success Stories:
Found Non-specification fasteners
Found Tank cars sent to non-registered/certified facilities
Found Dry disconnect fittings and damaging valves
Defects found on first load (following qualification and following construction)
Found challenges with manway safety bolts
Found challenges with gasket compatibility

Difficulties:
Information being provided on the request for approval
- Wrong Tank Car Specifications (i.e. 113J114J)
- Wrong Description of nonconforming conditions
- Measures being taken to ensure the tank car not leaking are not being identified in the request

Understanding of HMG-127
OTMA-3
Waiting for approval
Specific non-complying conditions
PLEASE NOTE: The actual form is not required to be sent in but the information on the document must be sent in in whichever format is easiest.

Root Cause Analysis:
Example 1
In lieu of sending the RCA, which was never completed, FRA received a 7.1/7.2 referencing the lack of information.

Industry concerns:
Inconsistencies and number of Revisions

HM-216B
Owner (Tank Car, Service Equipment, Lining/coating responsibility)
Quality Assurance Program
Qualification Program
Qualification vs. Maintenance
180.503 (if any maintenance is done that is part of the qualification program it has to be qualified after the maintenance event) maintenance events have to be identified in the qualification program. NAR is objective evidence that the qualification timeframe needs to be review and determine if an adjustment needs to be made.

Tank Car Quality Assurance Team – 108 facilities remain to be audited between now and the end of fiscal year 2013.

PHMSA
Lenard majors reported on the following
HM-216B (Final Rule)
Revised 179.13(b) (Approval by Associate Administrator for Railroad Safety, FRA)
Revised 174.63 (c) (2) Eliminated AAR600 (The tank and flatcar must comply with the applicable requirements of the HMR concerning their specification.)

HM-218G – Hope to have final rule by December which will address:
Molten Sulphur Rail Tank Car Guidance Document
Shipping paper requirements to permit “residue: last contained…”
Training recordkeeping requirements

2012 ERG has been published

At the January 2013 meeting, Stephane Garneau provided an updates on TC/TDGR activities. K. Alexy provided an update on FRA activities. C. West Freeman provided an update on PHMSA activities.
Stephane Garneau stated that a meeting is scheduled for February 12-13, 2013 in Ottawa, ON. Draft document will be sent early next week along with the agenda. TC is still looking into the H2S release from petroleum crude oil and if it needs to be classified as a TIH. Report is expected to out in the spring of 2013.

Karl Alexy provided the following report:
HMG-127 Revision 2 came out in October 31, 2012. Any comments should be sent to Karl Alexy. 2300 OTMA's were granted in 2012 compared to 1000 in 2011. Two or three week is the average process time for an OTMA-1 or OTMA-2 request. FRA is looking into an on-line application process for OTMA's.

Susan Starks is now working for another part of the government. Dr. Phani Raj has been hired to fill a position as tank car engineer at FRA. Efforts continue to audit certified and registered tank car facilities. In June the FRA is putting on a NAR Seminar in Reno, NV.

K. Alexy mentioned that there are concerns around the classification of petroleum crude oil which then raises concerns around the proper packaging selected based on the determined classification. FRA is still evaluating the use of 286K GRL in AAR 211.

C. West Freeman stated that HM-218G is expected to be published soon. HM-215K was published recently addressing appeals. No decision has been made or published on HM-251 which is to address the petition for packing group I and II tank cars.

At the April 2013 meeting, Stephane Garneau provided an updates on TC/TDGR activities. K. Alexy provided an update on FRA activities. L. Majors provided an update on PHMSA activities.

PHMSA
L. Majors stated that there is a safety advisory coming out to address NTSB recommendation on loading and unloading issues. PHMSA has yet to receive a response from OMB on the petitioned tank car. PHMSA continues their efforts under the MAP-21 initiative to reviewing over 6000 special permits for all modes of transportation to determine if it is a paperwork burdens and if cost can be reduced by incorporating long standing special permits into the regulations.

FRA
K. Alexy stated that FRA hired Dr. Phani Raj as a general engineer (hazmat packaging) in Washington, DC. It was stated that FRA is going to look at the process at which a facility selects the appropriate NDT method base on flaw size. The FRA plans to continue to verify a facilities ability to actually perform the work they are certified to perform.

FRA stated that manway bolt replacement would require qualification of the manway. It was also noted that a bubble leak test would not have to be performed if other means demonstrated a leak tight seal. FRA reported that there is nothing in the works to develop a specification for an LNG tender. FRA is taking a closer look at how petroleum crude oil is being classified. One of the ongoing FRA projects is to look at the suitability of AAR tank cars moving PGIII petroleum crude in 286K GRL service.

One-Time Movement Approvals (OTMA) – 1500 so far this year and on pace for 6000 by the end of the year. Root cause analysis reports being provided have not shown evidence of improvement nor preventive action.

Transport Canada

S. Garneau provided an update. Transport Canada is pleased with the process and workings of the Tank Car Committee and supports its efforts. Recently changed 11 safety standards within the amendment and awaiting publication. Changes to general service tank cars will be included in the revised standard. Transport Canada is reviewing the requirement to register tank car facilities in Canada. One option is to remove the facility registration requirements in Canada and utilize the AAR requirements.

At the July 2013 meeting, Stephane Garneau provided an updates on TC/TDGR activities. P. Raj provided an update on FRA activities. L. Majors provided an update on PHMSA activities.

PHMSA

L. Majors stated that PHMSA continues to MAP21 initiative project regarding special permits. The assignment is to evaluate which special permit can be incorporated into the regulations. The P-1577 tank car petition has been sent to OMB. Cheryl West Freeman has been promoted to chief engineer.

Phani Raj reported the following:

1. FRA and PHMSA are undertaking a comprehensive review of operational factors that affect the safety of the transportation of hazardous materials by rail. A Federal Register notice (FR v78, n 138, 7/18/13, p 42998, Docket FRA-2013-0067) has been issued seeking input from stakeholders and interested parties. A public meeting is scheduled for August 27-28 at DOT headquarters office. The focus of the meeting will be on 49CFR, Part 174.
2. OTMA statistics. In the 6 months of 2013 the following OTMAs were granted.

OTMA 1	OTMA 2	OTMA 3	OTMA Total
350	61	2192	2603

3. HM division/FRA will be conducting a webinar based outreach to the stakeholders, in 4th quarter 2013, to disseminate information on HMG-127 and the OTMA/RCA evaluation process. An announcement will be made on the date of the webinar in due course. FRA may also produce a video related to HMG-127 and the OTMA/RCA evaluation process.
4. FRA is working closely with Transport Canada and gathering information on the accident in Lac Megantic, Quebec.

5. FRA Region 8 is holding a "Hazmat Shipper and Training Seminar," from 17th thru 19th September in Billings, MT. If anyone is interested FRA can provide an electronic copy of the program and speaker's list.
6. BNSF has informed FRA, informally, that it will be initiating a pilot project to evaluate the feasibility of using LNG as a locomotive fuel.
7. PHMSA/FRA received a request for a special permit approval to use DOT113C120W specification tank car for transporting LNG. A second part of the special permit request seeks authorization to build and sell a DOT113C specification tank car with 140 psig rating for use in both ethylene and LNG service. This application is under review.

Transport Canada

S. Garneau stated that Transport Canada recently changed 11 safety standards within the amendment and awaiting publication. Amendment 12 will address safety marks.

REFERENCES: JP Gagnon 4/28/03(handout), 10/22/03 (handout), 4/21/04(handout), 10/22/04 (handout), 4/18/07 (handout) , 4/16/08 (handout); C. Freeman 10/16/02 (handout), 10/22/03 (handout), 4/21/04(handout) , 10/22/04 (handout), 4/20/05 (handout), 4/19/06 (handout), 4/18/07 (handout)

Recent Activity:
At the July 2013 meeting, J. Byrne stated that the participants are still working on batch loading data into the electronic system. TF has not included comments and narrative section in the electronic system of R-1, therefore the TF will discuss if this information should be added. One of the concerns about allowing a narrative field in the system is that it cannot be searched on for specific information.

This docket is a compilation of two dockets, Study of Tank Car Operating Environment (T80.16) and Stub Sill Inspection Program (T79.20-98) and will continue moving forward with the work of both groups.

The following was brought forward from docket T80.16. FRA, the RSI-AAR Tank Car Safety Project and Transport Canada are funding Phase 2B of the operating environment study, which involves two instrumented cars collecting sufficient load environment data to update M-1001's REPOS data and to generally support car design and maintenance planning. One car has completed its routes and its data is under analysis. A second car has completed its loaded miles and begun its empty mileage, the last segment of the test. An interim report on the two cars' loaded mileage has been drafted. The final report will be delivered by September 1.

The following issue has been brought forward from T79.20.There is a need to update the SS-3 program. It was noted that the work done on the U- 1 form may be of interest for this issue. With design modifications the current stub sill designs have shifted the location of fatigue damage from outboard of the bolsters to locations inboard of the bolsters. The current SS-3 program does not do a good job of capturing the issues. In discussion with FRA it was determined that updating SS-3 was preferable to sun setting the program.

At the October 2012 meeting, J. Byrne reported on the tank car integrated database. The program is in the final stages. Inboard sill pad variation (continuous versus non-continuous) will be included. TF is working on simplify two methods of data entry: schedule inspection versus non-scheduled inspection. Over the third quarter the RSI members worked on the batch upload specification for mapping purposes for those that have the information already electronically. Field by field review has taken place and the field specification document has been made available on the website. The RSI members are working with the IT departments to transition their information into the database. This may take several months depending on IT department priorities within the individual companies. Ultimately a CPC will be created by AAR to give guidance to the industry on how to use the Tank Car Integrated Database (TCID). The database is being considered a living system and therefore continuous improvement will occur. Old SS-2 and SS-3 data will be migrated into the new TCID system.

At the January 2013 meeting, J. Byrne stated that the group has finalized the record layout. The industries IT departments current have their focus on the industry component tracking initiative which has led to them away from this effort. Therefore a recommendation was made to have AAR publish a CPC that states the following:

1. The system is operational and can now be used
2. Set an voluntary compliance and mandatory compliance date (by the mandatory date all data is to be transferred into the new electronic system)

Options for mandatory implementation deadline date: January 1, 2014 or July 1, 2014

Motion, seconded, and passed to require electronic reporting by January 1, 2014. This will require a re-write of Appendix R. This will also require voluntary timeframe and continued use of current Appendix R and new electronic system.

At the April 2013 meeting, J. Byrne stated that AAR published CPC-1252 making they electronic system mandatory January 1, 2014. The database link is provided in the CPC. Access to the database is for car owners. K. Dorsey stated that any issue with the content should be sent to AAR. Car number changes would be entered in the "other" free flow field in the TCID system. EIN number is what will be used as the key field. Roger Simms needs to be added to the person to contact on questions related to the TCID database access. R-1, R-2, and SS-3 forms will be entered into this TCID system.

Action Taken: Motion made, seconded, and passed to establish two taskforces.

1. Appendix R TF – to make the necessary changes to legitimize this requirement. Jim Rader will be TF chairman. P. Student, J. Rader (Chr), R. Jachim, R. Morgan, L. Loman, T. Sisto, J. Byrne
2. Standing Template TF: Jim Rader (Chr.), T. Sisto, L. Strouse, M. Johnston.

At the July 2013 meeting, J. Byrne stated that the participants are still working on batch loading data into the electronic system. TF has not included comments and narrative section in the electronic system of R-1, therefore the TF will discuss if this information should be added. One of the concerns about allowing a narrative field in the system is that it cannot be searched on for specific information.

CURRENT TF: J. Byrne (Chr), F. Gonzalez, T. Treichel, B. Fronczak, K. Koch, R. Sims, M. Johnson, K. Alexy, R. Jachim, C. Wyler, A. Sisto, JP Gagnon, G. Sandheinrich

TF CHARGE:

REFERENCES: J. Byrne 10/03/08

Appendix R Review to Address TCID Requirements

Recent Activity: See Below.

During the April 2013 meeting, the TCC agreed to open this docket to address the necessary changes to Appendix R of M-1002 regarding the Tank Car Integrated Database (TCID) requirements, which will replace SS-3, R-1 and R-2 current reporting requirements.

At the July 2013 meeting, K. Dorsey reported that this docket was opened work on the appropriate language to add to Appendix R of M-1002 regarding the TCID system.

AAR received the following TF proposal via email 9/27/2013.

On April 18, 2013, the Association of American Railroads issued CPC-1252, "*Notice of the Availability of the Tank Car Inspection Database.*" The Tank Car Inspection Database ("TCID") is now available for car owners to report alterations, modifications, conversions, and tank damage formerly reported on the R-1, R-2, and SS-3 forms via the internet. Owners may report alterations, modifications, and conversions to tank cars in the database as well as the R-2 and SS-3 inspections. Owners will be able to print out paper copies of inspection forms if necessary and request a summary of data on owned cars from the database. Shops will be able to enter and review submitted data. The use of the database is mandatory on January 1, 2014. You may access TCID via www.rsiaarproject.com.

Implementation of the TCID requires several changes to the Association of American Railroads' *Manual of Standards and Recommended Practices*, Section C, Part III, M-1002, Specifications for Tank Cars. The following paragraphs will require revision to accommodate TCID.

Chapter 1

1.3.5 Interchange

Any tank car tank that does not meet prescribed test and qualification requirements is not authorized in railroad interchange.

A valid Certificate of Construction and, when applicable, ~~Exhibit R-1~~a TCID report~~s (see Appendix R)~~ must exist for any completed tank car in railroad service.

The *Field Manual of the AAR Interchange Rules*, Rule 90.A.1, prohibits the use of freight cars (including tank cars) in interchange over 40 years from date built except as otherwise provided for in the *Office Manual of the AAR Interchange Rules*, Rule 88.

1.3.13 Commodity Change

If a tank car is designated for a specific commodity on its Certificate of Construction and is used to transport another commodity or class of commodities, the commodity change alters the Certificate and must be reported ~~on Exhibit R-1~~in TCID.

1.3.14 Reporting Marks and Car Numbers

Changes in reporting marks and car numbers affect the validity of the Certificate of Construction and must be reported ~~on Exhibit R-1~~in TCID. Both old and new numbers must be reported. This is in addition to UMLER procedures and the requirements of the *Office Manual of the AAR Interchange Rules*, Rule 88, for such changes.

1.3.15 Documentation at the Sale of Tank Cars

- The following documents must accompany any sale of a tank car, except for scrap:
- Certificate of Construction (Form AAR 4-2)
- Outline of the current owner's maintenance program (areas of inspection, inspection methods, inspection frequencies, acceptance criteria)
- Tank car general arrangement, tank arrangement, and fittings arrangement drawings
- TCID reports and historical SS-1, SS-2, SS-3, R-1, and R-2 forms. ~~Exhibit R-1 and Exhibit R-2 reports, if any, describing modifications or repairs~~
- ~~For stub sill cars, Form SS-1 (see Fig. R13), SS-2 (no longer current), or SS-3, if any, documenting required inspection of stub sills and attachment welds~~

- Service reliability assessment data, including the above items, plus the following:
- Qualification reports
- Pressure relief device test certificates
- AAR QA 7.1 Forms

1.4.2.8 Alteration, Conversion, or Repair

For alterations, conversions, or welded repairs using previously approved procedures and materials, ~~an Exhibit R-1 report in compliance with Appendix R must be submitted~~ submit to TCID. For alterations, conversions, or welded repairs using procedures or materials that have not been previously approved, an application must be submitted on Form AAR 4-2. Such applications will be handled as outlined in paragraph 1.4.2 and related subsections.

1.4.3 Application Form AAR 4-2

1.4.3.1 Instructions

1.4.3.1.1 The following line-by-line instructions are provided for completing the "application" portion of Form AAR 4-2:

32. For tank cars with an underframe, enter "full." For stub sill cars, enter the code for the stub sill style (see ~~Appendix R, Exhibit R-2, fourth page,~~TCID for builder and sill codes).

16. Tank Car Inspection Database (TCID)

16.1 Car owners must report alterations, conversions, modifications, and tank damage, formerly reported on forms R-1, R-2, and SS-3, in the Tank Car Inspection Database ("TCID") via the internet at www.rsiaarproject.com. Owners will be able to print out paper copies of inspection forms, and request a summary of data on owned cars from the database. Shops will be able to enter and review submitted data.

16.2 Typically, a TCID report is required for reporting:

- Accident damage repairs to tank shell, heads, sumps, nozzles, and pads welded directly to the tank
- Alterations that affect the Certificate of Construction, such as changes to valves or fittings (see the definition for valves and fittings in Appendix A, Table A2)
- Center sill repairs
- Changes in authorized commodities
- Changes in reporting mark and/or car number
- Conversions (changes in tank or fittings that change the specification)
- Repairs to stub sill, bolster, and cradle pad connections to tank
- Tank buckle repairs
- Tank corrosion repairs
- Tank crack repairs

Chapter 2

2.2.16 Re-Stenciling AAR Class Cars to DOT/TC Class

AAR-class tank cars may be re-stenciled to DOT/TC class provided the following conditions are met:

2.2.16.1 The original construction of the cars must be in accordance with the DOT/TC specification.

2.2.16.2 At the time of conversion, cars must be qualified to the DOT/TC specification in accordance with the applicable federal regulation.

2.2.16.3 Identification plates have been added or replaced in accordance with the applicable federal regulation and with Appendix C, paragraph 4.0.

2.2.16.4 The proponent must ~~submit a Form R-1 to AAR~~ submit a re-stenciling report to TCID.

Appendix B (The basis for the following changes is the current language in Appendix B. If CPC-1259 is approved, the following changes will not occur. Accordingly, the Exhibit B-2 form in CPC-1259 would be revised to reference TCID).

3.3.2 Certified/registered facilities must be capable of performing, or arrange to have performed, all associated tank car activities incident to the class for which they are certified so that the completed car will be in compliance with the DOT/TC regulations and AAR Interchange Rules. ~~A signed Exhibit R-1 or Form AAR 4-2 must be submitted when required by the specification.~~

3.3.3 All work performed by subcontractors for a certified facility must be verified by the certified facility for compliance with all applicable specifications and regulations. ~~A signed Exhibit R-1 or Form AAR 4-2 must be submitted, as appropriate, when required by the specification.~~

3.4.4 All work performed by outside subcontractors for a registered facility must be verified by the registered facility for compliance with all applicable specifications and regulations. ~~A signed Exhibit R-1 or Form AAR 4-2 must be submitted, as appropriate, when required by the specification.~~

6.1.4 In addition to the data required per paragraphs 4.1, 4.2, and 5.2 of this appendix, applications for recertification must include copies of a typical ~~Exhibit R-1~~TCID report and an approved Form AAR 4-2, with a description of how these documents are originated, processed, and stored. ~~(Class E is excluded from this requirement.)~~

Appendix C

4.1.2 Plates are to be unpainted and of a size suitable to contain the following items of text. Letters must be a minimum of 3/16 in. high and be clearly stamped, etched, or embossed on the plates.

Underframe/Stub Sill Type Stub sill type designation used in the ~~SS-3~~TCID ~~inspection database~~.

Appendix P

2.3 Information Sources

In the process of reviewing each accident, the working group will consider information from the following sources:

- Reports from AAR inspectors
- DOT Form 5800.1
- Reports from carriers involved in accidents
- Reports from shippers involved in loading accidents
- Information contained in local media reports
- RPI-AAR Safety Project reports

- Car owner's ~~Exhibit R–1~~TCID reports

Appendix R

4.2 Previously Approved Procedures and Materials

4.2.1 When accident-related repairs, alterations, or conversions to tank car tanks are to be made using previously approved procedures and materials, ~~an Exhibit R–1~~a TCID report~~, in compliance with this appendix,~~ must be submitted by the car owner, or the company performing the work to the car owner, and the AAR Executive Director—Tank Car Safety (Director). ~~No transmittal letter is required.~~ Companies with multiple facilities may submit ~~Exhibit R–1~~TCID reports from one location.

4.2.2 Tank cars must not be returned to service until submission of the report. Failure to submit the required ~~Exhibit R–1~~TCID report may be cause for action by the AAR.

4.2.3 The Director may refer any ~~Exhibit R–1~~TCID report to the Tank Car Committee for review. The proponent and the car owner will be advised of this action.

4.2.4 If drawings depicting the previously approved procedures and materials have not been submitted for approval within the last 10 years, then such drawings must be resubmitted for approval on Form AAR 4-2, 4-3, 4-5, or 4-7.

~~**4.3 Exhibit R–1 Report of Tank Repairs, Alteration, or Conversion**~~

- ~~Exhibit R–1 (shown in Fig. R1) is required for reporting the following: Accident damage repairs to tank shell, heads, sumps, nozzles, and pads welded directly to the tank~~
- ~~Alterations that affect the Certificate of Construction, such as changes to valves or fittings (see the definition for valves and fittings in Appendix A, Table A2)~~
- ~~Conversions (changes in tank or fittings that change the specification)~~
- ~~Changes in reporting mark and/or car number~~
- ~~Changes in authorized commodities (listed on the original Certificate of Construction or subsequent R–1 form)~~

~~**4.3.1 The owner or, by agreement, the facility's management representative is responsible for providing all requested information, via hard copy or e-mail, in a format approved by the AAR, to the AAR Executive Director—Tank Car Safety, Association of American Railroads, 425 Third Street SW, Washington, DC 20024. Other methods of transmission are acceptable if agreed to by the AAR. R–1 forms must be typed or hand-written legibly or, if transmitted electronically, in a format that the AAR can view. A copy also must be sent to the car owner.**~~

~~**4.3.2 A separate Exhibit R–1 must be prepared for each tank car, except that with the car owner's permission, multiple identical cars receiving identical work may be reported on a single Exhibit R–1 form. When multiple cars are reported on a single R–1 form, a separate copy must be retained by the car owner for each car listed.**~~

~~**4.3.3 The information from the completed Exhibit R–1 forms must be retained in such a way that a printable electronic copy or paper copy can be obtained and that changes to the original information can be detected by the car owner or owner's representative1/ as back-up documentation of the work performed. The form used by the repair facility to provide information as to the work performed should be as agreed upon by the two parties and need not be the Exhibit R–1 form provided in this manual.**~~

~~4.3.4 The following instructions corresponding to the line numbers and field name in the database must be followed in filling out the report:~~

Delete R-1 Table and Forms

~~4.4 Exhibit R-2 Report of Nonaccident-Related Buckles, Corrosion, and Crack Repairs~~

~~4.4.1 Exhibit R-2 (shown in Fig. R3) is a means for collecting information pertaining to the following:~~

- ~~tank buckle repairs~~
- ~~tank corrosion repairs~~
- ~~tank crack repairs~~
- ~~center sill repairs~~
- ~~repairs to stub sill, bolster, and cradle pad connections to tank~~

~~4.4.2 Information supplied will be entered into a database and analyzed in an effort to establish failure trends. The AAR will maintain the database and provide periodic reports.~~

~~4.4.2.1 The owner, or owner's designee, is responsible for providing all requested information, via computer diskette, to the Director. The Exhibit R-2 software is to be utilized to accomplish this.~~

~~The software and user's guide are available from the Director by completing and submitting the Exhibit R-2 Software Registration Form available at the above address. The AAR is not to receive a hard copy of Exhibit R-2.~~

~~4.4.2.2 A separate Exhibit R-2 must be prepared for each car each time nonaccident buckles, cracks, or corrosion repairs are made to it. Up to six repairs per car may be reported on one Exhibit R-2 form by inserting information for each in the proper blank; a., b., c., d., e., or f., for each item of information. The Exhibit R-2 software allows entry of up to 26 different repairs per car.~~

~~4.4.2.3 The information from completed Exhibit R-2 forms must be retained, for back-up documentation of the work performed, by the car owner or the car owner's representative in such a way that a printable electronic copy or paper copy can be obtained and that changes can be detected.~~

~~The Exhibit R-2 form at the back of this publication may be used as the hard copy, but is not mandatory.~~

~~The software is capable of generating a printed record of repairs, which may also serve as the hard copy. The form used by the repair facility to provide repair information to the owner should be as agreed upon by the two parties, and need not be the Exhibit R-2 form provided in this manual.~~

~~4.4.2.4 Exhibit R-2 data in the software is entered by line number. These line numbers correspond to the entries on the Exhibit R-2 form provided in this manual. Each item of the form is to be filled in as described below. Consult the *R-2 Program User's Guide* before attempting to complete~~

~~**Exhibit R-2.**~~

Delete Table and forms

Appendix U

3.1.2 An initiator shall report all non-accident-related damage discovered on a tank, to the car owner ~~using~~ by uploading the information into ~~AAR Form R-2~~ TCID. The car owner shall forward this report to the manufacturer if the damage is design or manufacturing related.

3.1.6 An initiator shall report defects requiring submittal of ~~an R-1 report~~a TCID report ~~(See MSRP Specification M-1002, Appendix R, paragraph 4.3) to the car owner~~.

Modify Appendix Y

- Remove CPC-1097
- CPC-1114

CURRENT TF: J. Rader (Chr.), P. Student, R. Jachim, R. Morgan, L. Loman, T. Sisto, J. Byrne

TF CHARGE:

REFERENCES: J. Rader (9/27/13)

TCID Template Review

Recent Activity: See Below.

During the April 2013 meeting, the TCC agreed to open this docket to review any changes to Tank Car Integrated Database (TCID) template requirements.

At the July 2013 meeting, AAR has been notified that four new stub sill designs need to be added to the template list.

CURRENT TF: Jim Rader (Chr.), T. Sisto, L. Strouse, M. Johnston.

TF CHARGE:

REFERENCES:

Tracking the Application of Reflective Material and Constant Contact Side Bearings to Tank Cars

Recent Activity:
At the July 2013 meeting, update provided in background. COD

This docket was opened for tracking the efforts by car owners applying reflective material and constant contact side bearings on tank cars. This docket is for informational purposes only.

STATUS:

UMLER Query Date	# Complete Reflectorization	# Complete LTCCSB	# Tank Cars*
4/4/2012	227895	191125	318775
6/29/12	229963	220116	319655
10/4/2012	244970	214129	312938
01/01/2013	251974	221715	330702
04/01/2013	268126	235914	343441

*Total Tank Cars in UMLER (Including all status codes: Active, In-Active, Pre-Register, and Blank)

Background on Long Travel Constant Contact Side Bearing (LTCCSB) Requirement:
On March 24, 2005 AAR published circular letter C-10068: Implementation of Addition to Field Manual Rule 88.A.15.f(9) – Long Travel Constant Contact Side Bearings. The change to Rule 88 is shown below:
Field Manual of the Interchange Rules
Rule 88-Mechanical Requirements for Interchange
Section A. At Any Time

Present Rule 88.A.15--Special Equipment f. Tank Cars (9): Vacant

Approved Rule 88.A.15.f.(9): Must be equipped with AAR Specification M-948 approved long travel constant contact side bearings when shopped for tank car qualification as mandated by 49 CFR 180.509 or AAR Specification M-1002 Appendix D or receiving repairs in excess of the hour limitations in Rule 108.
The approved revision to the rule becomes effective on April 1, 2005 as was suggested in c-9971. In accordance with Rule 1.5.b.(10) this circular letter is mandatory and must be maintained until the next planned revision of the Field Manual in July.

Tracking the Application of Reflective Material and Constant Contact Side Bearings to Tank Cars

Background on Implementation of Rule 66 – Reflective Sheeting Requirement:
On Friday October 28, 2005 the Federal Railroad Administration (FRA) issued a revised Final Rule for the Reflectorization of Rail Freight Rolling Stock and lifted the previous stay of effectiveness. The new effective date of November 28, 2005 was also announced in the Federal Register. In response to the initial notice in the Federal Register, the AAR Arbitration and Rules Committee and as supported primarily by the AAR Car Repair Billing Committee have been issuing updates to the industry with respect to the development of new Rule 66, Reflective Sheeting.
On November 16 2005 AAR published circular letter C-10217. This letter was issued directly in response to the provisions contained in the October 28th release by the FRA to provide the updated Rule revisions that have been identified.

At the October 2012 meeting, updated table was provided in the docket.

A general statement was made by a TCC member that while researching data on the application of reflective material and constant contact side bearings on tank cars it was noticed that other equipment information stored in the UMLER data base is being entered incorrectly.

At the January 2013 meeting, K. Dorsey reported on updated table in the docket. J. Rader stated that there is nothing in the AAR field manual requiring the input into UMLER for Long Travel Constant Contact Side Bearings. TCC agreed to have AAR investigate if LTCCSB field can be made mandatory.

Extension of the life of the reflectors has been requested by the TCC. The TCC asked AAR to seek understanding from the EEC on this issue. Right now it is 10 years. The two specific items of interest are renewal requirements and location requirements. 2015 is the date for compliance of DOT instead of 2014 as stated from the July TCC meeting.

At the April 2013 meeting, K. Dorsey and J. Rader stated that there are no requirement to update UMLER when applying reflective material and CCSB to tank cars. Research continues at the EEC to determine the intervals to which reflective material must be reapplied.

At the July 2013 meeting, update provided in background. COD

REFERENCES:

Review Stencil Requirements for Thickness Testing

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that more data is needed before a CPC can be issued. J. Rader agreed to be chair of this docket. COD

Proposal received via email on October 2, 2012 by Jim Rader

3.3.3.1.2 Whether for corrosion protection or product purity, the year in which a tank thickness test is performed and the due date must be applied and/or maintained in the location specified on the qualification stencil (Fig. C5 or Fig. C9) in letters and numerals at least 1 in. (25.4 mm) high. A station stencil is required. For tank cars with an internal coating or internal lining, enter "LNG RMVL" under the column "DUE" to denote the thickness test is required at the time of coating or lining removal.

At the October 2012 meeting, K. Dorsey reported on the proposal provided in the background. Motion made, seconded, and passed to move this Paragraph 3.3.3.1.2 to the executive TCC for consideration.

At the January 2013 meeting, K. Dorsey reported on the proposal shown in the docket. *A motion was made, seconded, and passed to adopt proposal as written*.

At the April 2013 meeting, K. Dorsey stated that the proposal was adopted in January 2013 and a CPC needs to be written by AAR to implement the approved proposal.

Executive Committee Action Taken: The proposal that was approved in January 2013 is being pulled back and will not be published. More information is being collected by industry and sent to AAR and TF chairman.

At the July 2013 meeting, K. Dorsey stated that more data is needed before a CPC can be issued. J. Rader agreed to be chair of this docket. COD

CURRENT TF: A. Willaredt, J. Rader, T. Dekoning, R. Burnett, G. Alderson

TF CHARGE: Review the requalification stencils on lined cars, in particular the thickness testing

REFERENCES:

Recent Activity:
At the July 2013 meeting, COD

At the October 2012 meeting, covered under T59. COD

At the January 2013 meeting, J. Sbragia is the discussant not T. Treichel. COD material discussed under docket T59.

At the April 2013 meeting, COD

At the July 2013 meeting, COD

REFERENCES: T Treichel 10/26/04, 11/24/04, 12/15/04, 6/3/05, 1/04/06, 5/10/06, 5/17/06, 5/19/06X2, 5/22/06, 5/25/06, 2/22/08, 3/13/08X2; P Kinnecom 11/29/04, 11/30/04, 5/25/06, 5/30/06; T Dalrymple 11/26/04, 2/13/05; B Finn 1/14/05 (handout), 2/8/05; J Sbragia 3/15/07, 5/4/07

Designation DOT130AW for New Car Class

Recent Activity:
At the July 2013 meeting, P. Student reported on the material provided to the TCC prior to the meeting. TF effort continues.

This docket was opened at the July 2011 meeting to develop a specification under 49CFR179.4 for tank cars constructed under the provisions of DOT-SP15036, designed to transport materials poisonous by inhalation. The construction of these tank cars are not like any other pressure tank car, thus requiring a new specification.

A new class, 130, is used for the specification. This tank car consists of a commodity tank supported by a support structure. The primary function of the commodity tank is to contain the lading. The primary functions of the support structure are to bear the rail loads and protect the commodity tank. The commodity tank is connected to the support structure at the manway nozzle, top center of the two structures. The two structures are otherwise kept concentric by various attachments attached to one structure while the other.

At the October 2012 meeting, P. Student described the new proposal which was provided prior to the meeting. This is for a new specification in which inter tank is placed in a support structure and the design is based on a performance standard. The only hard joining structure is at the nozzle. The outer portion of the tank car is the support structure. TF used existing 105 and 113 regulations for the basis of this specification. A draft of this specification is under review. The progress is limited on section regarding the tank anchor due to information collected.

Path forward:
Consider load requirements any freight car must past
Investigate chapter 6 requirements
Instrumented tests had loads well over 7G

AAR received the original proposal material from P. Student via email 4/2/2012

At the January 2013 meeting, P. Student stated that this is pending modeling results. Information is being finalized and the TF plans to meet soon.

At the April 2013 meeting, P. Student provided an update via PowerPoint presentation. TF hopes to have a formal recommendation by the July TCC meeting.

AAR received an updated proposal from P. Student via email 7/8/2013. This document was provided with the background for the July 2013 TCC meeting. This version must still be reviewed and accepted by the task force. The chair has reviewed draft for completeness, limited reference, and clarity.

Designation DOT130AW for New Car Class

At the July 2013 meeting, P. Student reported on the material provided to the TCC prior to the meeting. TF effort continues.

CURRENT TF: P. Student, AD, McKisic, G. Sandheinrich, J. DeLacerda, F. Reiner, K. Dorsey, K. Alexy, JP Gagnon, J. Kappel, L. Loman, L. Majors

TF CHARGE:

REFERENCE: P. Student (4/2/12, 7/8/13)

Recent Activity:
At the July 2013 meeting, P. Student reported that the formal recommendation is still being working on.

This docket was opened to move tank car specifications from 2 special permits into the regulations.

Under the provisions of §179.4 Changes in specifications for tank cars proposed changes in or additions to specifications for tanks must be submitted to the Executive Director—Tank Car Safety, AAR, for consideration by its Tank Car Committee. The Tank Car Committee will review the proposed specifications at its earliest convenience and report its recommendations through the Executive Director—Tank Car Safety to the Department. The recommendation will be considered by the Department in determining appropriate action.

Special permits DOT-SP 11803 and DOT-SP15131 authorize a DOT113A90W tank car for transportation of argon, nitrogen and oxygen, atmospheric gases. Tank car of this specification have been used for a number of years with good results.

Changes in the regulations necessary for inclusion of this specification are to §173.319 to include the requirements for argon, nitrogen and oxygen and to 179.401-1 for additional requirements for the DOT113A90W specification. The modifications to the sections to accommodate the changes are show below

AAR received the following recommendation via email 4/4/2012 by P. Student:

Recommendation
The Tank Car Committee through the Executive Director – Tank Car Safety recommends to the Department the inclusion of specification DOT113A90W in the regulations.

173.319 Cryogenic liquids in tank cars

(d) A Class DOT-113 tank car is authorized for the shipment of the following cryogenic liquids subject to the following additional requirements:

(2) *Argon, ethylene, hydrogen (minimum 95 percent parahydrogen), nitrogen and oxygen cryogenic liquids* must be loaded and shipped in accordance with the following table:

Pressure Control Valve Setting or Relief Valve Setting

Maximum start-to-discharge pressure (psig)	**Maximum permitted filling density (percent by weight)**						
	Argon	Ethylene	Ethylene	Ethylene	Hydrogen	Nitrogen	Oxygen
17					6.6		
25	132					72	104
45		52.8					
55	127.2					72	104
60	126					72	104
75			51.1	51.1			
Maximum pressure when offered for transportation			10 psig	10 psig	10 psig		
Design service temperature	Minus 320 °F	Minus 260 °F	Minus 260 °F	Minus 155 °F	Minus 423 °F	Minus 320 °F	Minus 320 °F
Specification (see §180.506(b)(3) of this subchapter)	113A90W	113D60W 113C60W	113C120W	113D120W	113A175W 113A60W	113A90W	113A90W

§ 179.401-1 Individual specification requirements

In addition to §179.400, the individual specification requirements for the inner tank and its appurtenances are as follows:

DOT Specification	**113A60W**	**113A90W**	**113C120W**
Design service temperature, °F	-423	-320	-260
Material	§179.400-5	§179.400-5	§179.400-5
Impact test (weld and plate material)	§179.400-5(c)	§179.400-5(c)	§179.400-5(c)
Impact test values	§179.400-5(d)	§179.400-5(d)	§179.400-5(d)
Standard heat transfer rate			
(BTU per day per lb. of water capacity, max.) (see §179.400-4)	0.097	5.8	0.4121
Bursting pressure, min. psig	240	240	300
Minimum plate thickness shell, inches (see §179.400-7(a))	3/16	3/16	3/16
Minimum head thickness, inches (see §179.400-8(a), (b), and (c))	3/16	3/16	3/16
Test pressure, psig (see §179.400-16)	60	90	120
Safety vent bursting pressure, max. psig	60	90	120
Pressure relief valve start-to-discharge pressure, psig (±3 psi)	30	60	75
Pressure relief valve vapor tight pressure, min. psig	24	48	60
Pressure relief valve flow rating pressure, max. psig	40	66	85
Alternate pressure relief valve start-to-discharge pressure, psig (±3 psi)		72	90
Alternate pressure relief valve vapor tight pressure, min. psig		58	72
Alternate pressure relief valve flow rating pressure, max. psig		80	100
Pressure control valve stat-to-vent, max. psig (see §179.400-20(c) (4)	17		Not required
Pressure control valve		Optional up to 60 psig	
Relief device discharge restrictions	§179.400-20		§179.400-20
Transfer line insulation	§179.400-17		Not required

Consider New DOT113A90W Specification

At the October 2012 meeting, P. Student stated that changes to tank car specifications must go through the Executive Director of Tank Car Safety of AAR prior to going to PHMSA. Docket open as information only at this time. Work involves Mr. Student providing information to K. Dorsey.

At the January 2013 meeting, K. Dorsey stated that a special permit has been issued which allow these cars to operate. K. Dorsey stated that efforts are being made allow the transportation of LNG , which would lead to a potential new specification DOT113A140W. If this were to move forward a petition would need to be made to DOT which would include changes to 49 CFR Part 173 and the 172.101 table to allow LNG to be shipped without special permit.

At the April 2013 meeting, P. Student reported on the recommendation of specification DOT113A90W. TF hopes to have a formal recommendation by the July TCC meeting.

At the July 2013 meeting, P. Student reported that the formal recommendation is still being working on.

CURRENT TF: P. Student

TF CHARGE:

REFERENCE: P. Student (4/4/12)

Review of Richmond Built Stub Sills

Recent Activity:
At the July 2013 meeting, the docket name needs to be changed to "review non-continuous stub sills". COD pending additional information being collected, information will be reviewed by TCC before issuing a CPC.

As discussed at the July 2008 meeting, BNSF had a 1973 Richmond Built design has a fatigue cracks ¾" to 1" defect and so a recommended inspection would like to be done on these cars. BNSF is in the process of developing a fatigue analysis and initial findings indicate that a 10 year interval may not be enough to prevent failure during transportation. The BNSF representative suggests that an inspection interval shorter 10 years may be appropriate on these design cars. P. Whelan made a motion to open up a docket on sill pad and fatigue issues on Richmond Build Tank Cars. The TF will be P. Whelan, F. Gonzalez (FRA), JP Gagnon (TC), Joe Perez (UTC), John Sbragia (GATX) and Dave Maechling with additions expected at the October meeting. Charge of TF:. Issues that may impact the conclusion include what effect the head brace and sill pad modifications may have on fatigue performance. BNSF has funding to perform fatigue analysis on Richmond Cars.

At the October 2012 meeting, K. Dorsey stated that an MA was published by AAR for tank cars with Richmond built stub sills. TCC has asked AAR to publish another MA on all other tank cars exhibiting the same issue. Docket will remain open until all cars are accounted for.

At the January 2013 meeting, COD pending CPC and maintenance advisory (MA).

At the April 2013 meeting, COD pending CPC.

At the July 2013 meeting, the docket name needs to be changed to "review non-continuous stub sills". COD pending additional information being collected, information will be reviewed by TCC before issuing a CPC.

CURRENT TF: P. Whelan (Chr), F. Gonzalez (FRA), JP Gagnon (TC), Joe Perez (UTC), John Sbragia (GATX), D. Maechling, P. Allenby

TF CHARGE: Consider the inspection interval of Richmond built tank cars

REFERENCES:

Review Non-Continuous Stub Sills

Recent Activity: NEW DOCKET

This docket was opened to review systemic issues with sub sill tank cars equipped with non-continuous under frame reinforcement. There have been several instances of crack initiating at attachment weld terminations that have resulted in catastrophic tank failures. The critical size of the initiating cracks has been comparatively small and there is concern that either inspection methods or inspection procedures used at time of qualification are not catching flaws that could lead to tank failure prior to the next inspection.

CURRENT TF:

TF CHARGE:

REFERENCES:

AAR Hazardous Materials (BOE) Committee Liaison

Recent Activity:
At the July 2013 meeting, P. Student reported that B. Fronczak was awarded the Holden Proefrock Award during this year's AAR/BOE Hazmat Seminar in Addison, TX. One of the items discussed by the Hazardous Materials (BOE) Committee after the seminar was the timing of the event and could it be held in conjunction with the TCC meetings in 2015. The TCC shared their viewpoints, but overall didn't seem to have an issue with trying it as long as the logistics work out.

This docket was established to improve and maintain communications between the Hazardous Materials (BOE) Committee (formerly Bureau of Explosives Steering Committee) and the Tank Car Committee, recognizing that the HAZMAT Committee deals with several matters of interest to the tank car industry. At the 7/97 meeting, it was noted that PJ Student has joined the Tank Car Committee and will serve as the liaison between the Hazmat Committee and the TCC.

At the October 2012 meeting, P. Student reported that the BOE committee submitted comments to FRA on the OTMA HMG-127 guidance document. The BOE Publications TF has been working on several BOE publications one of which is Pamphlet 34. AAR will ensure that the changes to Pamphlet 34 are provided to the BOE Publications TF so that approval can take place by the AAR Hazardous Materials (BOE) Committee.

At the January 2013 meeting, P. Student discussed the damage assessment TF effort under the AAR Hazardous Materials (BOE) Committee. P. Daum is the project manager. Pamphlet 34 was recently published which includes the all of the material under paragraph 6.0 from Appendix D which includes tables D7-D13. Another publication available to industry is the Field Guide to Tank Cars. The AAR was asked to send one copy to each TCC member. The AAR Hazardous Materials (BOE) Seminar is scheduled for May 21-23, 2013 in Addison, TX. Information on the event can be found on the BOE website at www.boe.aar.com

At the April 2013 meeting, P. Student reported that the BOE seminar is May 22-23, 2013 and the keynote speaker will be Jim Rader. P. Student thanked the NAR RTF for all their efforts on behalf of the Hazardous Materials (BOE) Committee. BOE publication TF maintains both pamphlet 34 and the Field Guide to Tank Cars and encourages industry to provide comments.

At the July 2013 meeting, P. Student reported that B. Fronczak was awarded the Holden Proefrock Award during this year's AAR/BOE Hazmat Seminar in Addison, TX. One of the items discussed by the Hazardous Materials (BOE) Committee after the seminar was the timing of the event and could it be held in conjunction with the TCC meetings in 2015. The TCC shared their viewpoints, but overall didn't seem to have an issue with trying it as long as the logistics work out.

LIAISON: PJ Student

REFERENCES: PG Kinnecom 7/31/02 (OT-55-E), 1/7/04, 5/14/04 (CPC-1161, OT-55-F), 3/1/05 (CPC-1165, OT-55-G), 8/26/05 (CPC-1171, OT-55-H), 8/4/06 (CPC-1174 Sup. 1)(OT-55-I)

Develop Standards for Non-Pressure Cars Transporting Ethanol and Crude Oil

Recent Activity: See Below. (Information Only)

This is an active docket under the executive TCC session. It was agreed upon by the TCC that worked performed under this docket will be disseminated under Sub 1. This docket will strictly be used to report on activity performed under executive TCC docket T87.6.

At the October 2012 meeting, K. Dorsey stated the CPC that was published on section 2.7. Petition P-1577 is waiting for response from PHMSA.

At the January 2013 meeting, K. Dorsey reported that the ANPRM has not been published.

At the April 2013 meeting, COD

At the July 2013 meeting, PHMSA stated that P-1577 has been sent to OMB.

REFERENCES:

Proposed Pressure Relief Valve Requirements for Ethanol and Crude Oil Tank Cars

Recent Activity: see below.

During the July 2012 meeting, it was suggested that the TCC could use paragraph 2.7 publish a standard. The goal would be to insure that cars empty before a shell failure. The committee agreed to form a TF.

At the October 2012 meeting, K. Dorsey reported that P-1577 had recommendations for safety valve sizing. The goal was to increase the size of the safety valves on these cars to reduce the breaching event of the car when in a pool fire situation. The flow rate being considered is 27000 scfm (standard cubic feet per minute). Paragraph 2.7 may need to be modified to include this recommendation.

At the January 2013 meeting, P. Student provided a summary of the TF efforts to date. Third party review of the AFFTAC model related to this work is being planned. There was some analysis perform using the most recent version of AFFTAC. The analysis shows that the safety valves would go beyond 100 minutes with significant amount of product remaining in the tank car. The TF has a few ideas on how to address this issue. The TCC recommended that the TF continue their work to determine the boundary conditions. Valve manufacturers on the TF also have some ideas on how to make the valves work too.

At the April 2013 meeting, P. Student reported on the two TF charges via PowerPoint presentation. In regard to adding the 75 psi STD 27,000 SCFM PRV's for ethanol and crude oil and PRV relief in protective housing covers for class 3 materials it was noted by Pat that under T87.6 task force AFFTAC model all product would be removed before tank failure. However the model was re-ran using a later version of AFFTAC, tank failed before emptying product. Statement was made that even with 2 pressure relief valves installed did not protect the failure of the tank. TF plans to have a full proposal by the October TCC meeting.

At the July 2013 meeting, after in-depth discussion on when the higher flow capacity pressure relief valves should be made a requirement on tank cars transporting ethanol and crude oil the following language was recommended:

Chapter 2 Language under 2.7.3 Pressure Relief Devices:
For non-jacketed tank cars ordered after October 1, 2013, for the transportation of packing Group I, II, and III materials with the proper shipping names "*petroleum crude oil*," *alcohols, n.o.s*." and "*ethanol and gasoline mixtures*" must be equipped with a reclosing pressure relief device system having a start-to-discharge pressure of 75 psi, and a minimum flow capacity of 27,000 SCFM.

Appendix E Language under 4.4 Openings in Protective Housing Cover:
Require for tank cars used to transport Division 2.1; and for tank cars built after October 1, 2013, used to transport Class 3 materials: the protective housing cover must be provided with an opening and self-closing weather cover above each pressure relief device that is concentric with the discharge of the pressure relief device and has an area at least equal to the valve outlet area. (See Fig. E15 for a typical self-closing design.)

Proposed Pressure Relief Valve Requirements for Ethanol and Crude Oil Tank Cars

Tank cars built prior to October 2, 2013, used to transport Class 3 materials will require, no later than the next tank qualification, a protective housing cover that must be provided with an opening and self-closing weather cover above each pressure relief device that is concentric with the discharge of the pressure relief device and has an area at least equal to the valve outlet area. (See Fig. E15 for typical self-closing design.)

Action Taken: A motion made, seconded, and passed to have AAR publish a CPC for comment on the language as written above. The TCC agreed that these changes would to apply to cars ordered after October 1, 2013 with a phased in approach for the inclusion of openings on existing cars equipped with pressure housings that may not already include venting provision.

Comment was made that for Coil and insulated cars the T87.6.1 should decide implementation date and decide if packing group III should be included.

TASK FORCE: P. Student (Chr), J. Perez, L. Loman, L. Strouse, J. Bolds, N. Gambow, T. Treichel, T. Sisto, K Dorsey, C. Machenberg, J Rader, W. Woodall, Dan Welsh, M. Nunez

CHARGE: Proposed Pressure Relief Valve Requirements for Ethanol and Crude Oil Tank Cars

REFERENCES:

Integrity of Threaded Top Load/Unload Connections

Recent Activity:
At the July 2013 meeting, AAR has received comments and they have been addressed. CPC for comment will be published by AAR.

The AAR has received information about a tank car (ACFX 95722) that was leaking through the top fittings. The configuration of the fittings arrangement made it very difficult for the responders to mitigate the leak, and the fittings position, coupled with the protective housing being in tight proximity, forced the responders to use methods other than their normal procedures to make the repair. The leaking valve was a threaded connection that was able to take approximately a full turn from the position the responders found when they arrived at the car.

At the October 2012 meeting, COD

At the January 2013 meeting, K. Dorsey discussed the information provided in the background for the provision for an alternative thread pattern. There was a typo error in the proposal the reference to SAE 2' should be SAE 2".

A motion was made, seconded and passed with the type error corrected to the July 2012 proposal provided in the docket. AAR will publish a CPC on this activity.

At the April 2013 meeting, AAR is to publish a CPC.

At the July 2013 meeting, AAR has received comments and they have been addressed. CPC for comment will be published by AAR.

TASK FORCE: P. Student (Chr), J. Perez, F. O'Brien, L. Loman, T. Sisto, T. Mannas, M. Richardson, A. Richter, L. Strouse, J. Bolds, M. Clark, M. Williams, T. DeKoning, L. Verhey, L. Gorman, R. Phelps

CHARGE: Investigate attachment of valves by means of threaded connections/closures and make recommendations

REFERENCES: P Student 8/12/06, 3/29/12; J. Perez 3/15/07

Consider Revision of A8.1.3 Alternate Flow Capacity

Recent Activity:
At the July 2013 meeting, COD

At the October 2012 meeting, COD

At the January 2013 meeting, K. Dorsey stated FRA has a total containment study ongoing involving sodium hydroxide and potassium hydroxide. Information provided from this study will have an impact on this docket.

At the April 2013 meeting, FRA has not started the total containment study however they are working on the test plan. L. Loman stated that the TF will look at 75 psi and 165 psi.

At the July 2013 meeting, COD

CURRENT TF: L. Loman (Chr), P. Student, R. Phelps, R. Heald, and J. DeLacerda, M. Clark

TF CHARGE:

REFERENCES: P Student 3/31/10

Consider Permanent Marking for AAR Class Cars

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that some of the stainless steel plates found in the recent derailment had been under fire and some were heated so much that it caused the stamped lettering to be illegible. The standard needs to be modified to require that the specification plate be attached using stainless steel pins. TCC agreed that this was an editorial committee changed and asked AAR to publish a CPC.

This docket has been opened to discuss the marking of AAR class cars. It has been determined in response to a question by PHMSA that AAR class cars steel stamped DOT would need to comply with all DOT requirements regardless of the stenciled specification.

As an alternative it may by possible to utilize an "operating plate" similar to the identification plate found in Appendix C as is done on cargo tanks.

At the October 2012 meeting, K. Dorsey stated that a modification to the language in Appendix C related to the specification plate needs to reflect the regulatory language recently changed by final rule HM-216B.

TF Proposal provided to AAR via email by TF chair on 1/3/2013

This docket proposes to revise the Association of American Railroads, *Manual of Standards and Recommended Practices,* Section C, Part III, M-1002, Specifications for Tank Cars, Appendix C paragraph 4.0 to coincide with the final rule issued under Docket HM-216B; incorporating DOT special permit, SP-12905. This change recognizes the use of a permanent specification plate to identify the characteristics of an "*as-built*" tank, and the use of an additional plate to identify the "*operating*" characteristics of the tank. For example, building and maintaining a tank to a DOT class, but operating the tank to an AAR class. The additional operating plate, as outlined in the federal regulation, will denote changes to the as-built design and will help ensure the maintenance of the tank to the class of construction (unless the conversion is permanent).

Appendix C, paragraph 4.0 would be completely revised as follows:

4. TANK IDENTIFICATION PLATES

4.1. After July 25, 2012, to certify compliance with federal requirements, the tank manufacturer must install two identical permanent identification plates in accordance with 49 CFR 179.24.

4.1. When a modification to the tank changes any of the information shown on the tank identification plate, the car owner or the tank car facility making the modification must install an additional variable "*operating*" identification plate on the tank in accordance with 49 CFR 179.24 (a)(3).

4.2. Tank car owners may apply the tank identification plate ~~or~~ and, when required, a variable "*operating*" specification plate on any tank car built before July 25, 2012.

4.3.

4.4. The tank car owner must replace any illegible or missing identification plates. The car owner must use the information on the tank specification plate attached to the opposite end of the car, or from reconstructed information if both plates are missing.

4.4 Conversions
A pressure car tank that is permanently converted to a lower pressure specification must have the new specification and conversion date stamped on the outside of the manway nozzle or flange, in 3/8-in. (9.52-mm) letters, on the left side of the car.

At the January 2013 meeting, the proposal provided in the background was discussed. This proposal references the federal rule and removes language from Appendix C. There was considerable discussion on how the DOT stamp on older tank cars would be handled. The committee agreed that securement words should be handled first before addressing this proposal. Securement wording included in this proposal and a final proposal is expected for the April 2013 TCC meeting.

At the April 2013 meeting, J. Byrne discussed the tank identification plates language provided in the docket. TF still needs to discuss the securement specifications and then will seek approval of the recommendation from the TCC. J. Rader suggested removing the word “operating” from the recommendation. COD

At the July 2013 meeting, K. Dorsey stated that some of the stainless steel plates found in the recent derailment had been under fire and some were heated so much that it caused the stamped lettering to be illegible. The standard needs to be modified to require that the specification plate be attached using stainless steel pins. TCC agreed that this was an editorial committee changed and asked AAR to publish a CPC.

CURRENT TF: J. Byrne (Chr), P. Student, A.D. McKisic, M. Richardson, D. Maechling, JP Gagnon, H. Weber, D. Mullins, R. Jachim

TF CHARGE:

REFERENCES:

Review Stencil Requirements for Tank Cars

Recent Activity: See below.

This docket has been opened to review stencil requirements for tank cars. It has been requested that a TF review the requirements for inspection data and station information to determine if the stencils are necessary and the information provided by the stencils represents what industry feels is needed by shippers and responders.

Review Stencil Requirements for Tank Cars

At the July 2012 meeting, the committee asked for clarification of this request.

At the October 2012 meeting, K. Dorsey stated that efforts need to be made to ensure that all markings required by TC, DOT, and AAR requirements are still useful to the tank car community.

At the January 2013 meeting, COD

At the April 2013 meeting, T. Dekoning stated that the TF has not met. COD

At the July 2013 meeting, COD

CURRENT TF: T. Dekoning (Chr), D. Mullins; M. Richardson, K. Dorsey

TF CHARGE:

REFERENCES:

Review Stencil Placement Requirements for Tank Cars

Recent Activity: NEW DOCKET

The TCC agreed to open this docket at the July 2013 TCC meeting.

This docket has been opened to review stencil placement requirements for tank cars. It has been requested that a TF review the placement requirements that will work for all sizes of tank cars, with significant focus being placed on the smaller dimension tanks.

TF needs to be established

CURRENT TF:

TF CHARGE: Review the placement requirements that will work for all sizes of tank cars, with significant focus being placed on the smaller dimension tanks.

REFERENCES:

Review Paragraph D6.2 and E4.3.5.3

Recent Activity:
At the July 2013 meeting, CPC has addressed proposal 1-3 but proposal 4-7 still needs to be addressed and a CPC published.

K. Warner requested the review of Appendix D and E via a TF. He mentioned the gasket configuration differences between D6.2 and E.4.3.5.3. Companies are applying newly developed gaskets that don't meet the requirements in these appendices. Suggest modifying D6.2 to mirror what is in appendix E. This would allow alternatives. New docket will be created.

Current Wording M-1002, Appendix D, D6.2

6.2 Gasket

Install a new gasket compatible with the commodity to be transported. Gasket size shall be as specified by the car manufacturer on the applicable manway style chart (Tables D7 through D12). As an alternative, manway nozzle rim style gaskets shown in Table D13 may be used, provided the gasket seats and seals properly. Care shall be exercised to remove existing commodity, old gasket, and gasket cement from gasket seating surfaces before carefully installing the new gasket.

Current Working M-1002, Appendix E, E.4.3.5.3

4.3.5.3 Any gasket configuration that produces an effective seal and provides adequate retention may be applied at the manway; however, the hinged manway cover must also be able to properly retain and effectively seal when equipped with the standard gaskets listed below:

•Elastomeric a/ gasket: 21 11/16 in. O.D. × 19 1/2 in. I.D. × 1/4 in. thick
•Hard gasket: 21 5/8 in. O.D. × 19 1/2 in. I.D. × 1/8 in. thick

a/ Elastomeric refers to a solid "rubber" type material, such as EPDM, Viton®, Buna-N, or Neoprene, without any reinforcement or fibers.

At the October 2012 meeting, K. Dorsey stated the efforts still continue on getting all recommendation put into the applicable CPC.

At the January 2013 meeting, K. Dorsey reported on the information in the background. Modify pamphlet 34 from the language in Appendix D. The references to gasket requirements in Appendix D will reflect Appendix E.

At the April 2013 meeting, AAR to update information in pamphlet 34 based on information within this docket.

At the July 2013 meeting, CPC has addressed proposal 1-3 but proposal 4-7 still needs to be addressed and a CPC published.

Review Paragraph D6.2 and E4.3.5.3

CURRENT TF: K. Warner (Chr), Hazardous Materials (BOE) Committee Liaison, AD McKisic, J. Perez, T. Waggoner, R. Spring, M. Clark, S. Murray, L. Loman, T. Sisto, K. Alexy, JP Gagnon, C. Edmonds, P. Langley, J. Bolds, J. Becherer, H. Schneider, D. Reed

TF CHARGE: To have consistency of Appendix D and E under E.4.3.5.3 and D6.2.

REFERENCES: K Warner 12/9/09, 3/31/10, 7/17/10

Review Appendix D for Compliance with Current 49 CFR 180 Inspection Requirements

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that AAR211 tank car qualification requirements are still based on HM-201 and not the implemented HM-216B. AAR is still evaluating whether or not to update the qualification information for AAR cars to match that of HM-216B. M. Richardson stated that the comparison between HM-201 and 180.509 will be completed and provided to the TCC prior to the October 2013 TCC meeting.

This docket was opened to address discrepancies between Appendix D and the current inspection requirements of 49 CFR 180 as well as determining the need for a requirement to use an AAR approved Certificate of Test Form, if so for what activities, and clarify the conditions under which service equipment could be retested. Descriptions of the specific issues are as follows.

At the October 2012 meeting, L. Loman stated that the TF is to focus on the standardizing the certificate of test form for pressure relief valves only.

At the January 2013 meeting, K. Dorsey stated that the Certificate of Test form that is provided in M-1002 or one provided by the manufacturer is appropriate. Better traceability is desired and therefore the preference is to have a standardized form required to be provided to the purchaser. At the current time there is no standardized form and some information may not be included on some of the present sheets.

At the April 2013 meeting, L. Loman stated that the TF has not met. TCC desires standardize certificate of test form for valves and fittings. TF will look at the certificate of test forms and surge suppression devices inspections.

At the July 2013 meeting, K. Dorsey stated that AAR211 tank car qualification requirements are still based on HM-201 and not the implemented HM-216B. AAR is still evaluating whether or not to update the qualification information for AAR cars to match that of HM-216B. M. Richardson stated that the comparison between HM-201 and 180.509 will be completed and provided to the TCC prior to the October 2013 TCC meeting.

CURRENT TF: L. Loman (Chr.), D. Mullins, D. Prince, D. Ronzani, R. Jachim, T. Muller, J. Fiore, L. Verhey, J. Cheresnowsky, M. Clark, K. Alexy

TF CHARGE:

REFERENCES:

Alternatives to Qualification Markings

Recent Activity:
At the July 2013 meeting, COD

This docket was opened to discuss an alternative approach to the current requirements for tank car qualification markings. The thought behind this effort is to make it easier for car owners to manage their fleets using an electronic database to store tank car markings and stencils. It was noted that any proposal presented by this TF must be reviewed and agreed upon by the regulators, owners, carriers, and shippers.

At the October 2012 meeting, D. Mullins reported that the alternative communication effort behind this proposal is no longer going to reside at the TCC it will be handled by the EEC. The only item that will be discussed with the TCC is the alternative to the tank car qualification marking.

At the January 2013 meeting, COD

At the April 2013 meeting, D. Mullins stated that the TF has not met, but will have a recommendation by the October 2013 TCC meeting. COD

At the July 2013 meeting, COD

CURRENT TF: D. Mullins (Chair), K. Warner, R. Jachim, P. Student, J. Hayes, K. Alexy, JP Gagnon, D. Nestler, T. DeKoning, D. Fredbeck, T. DeKoning
TF CHARGE: Recommend Alternative Means of Recording and Disseminating Qualification Information

REFERENCES:

Review Appendix E 4.1.6

Recent Activity:
At the July 2013 meeting, K. Dorsey stated that an editorial change is needed to allow tank cars with slip tube devices be removed and replaced with magnetic tube devices, also include a statement that the C kit might not fit the dimensions of the replaced device.

This docket was opened to review Appendix E 4.1.6. The following recommendation was received to address issues when slip tube gauging devices are removed and replace with magnetic gauging device.

There is a wording change needed in M-1002 for cars being altered to remove slip tube gauging devices under Chapter 1, par. 1.3.9. App. E. 4.1.6 appears to mandate that the manway covers on such cars accommodate capping kits. As I recall, this was not the intent of the rule change in 1.3.9 in 2004. In order to clarify the intent, I propose the changes shown below:

At the October 2012 meeting, COD pending AAR publication of CPC.

At the January 2013 meeting, COD pending publication of an additional CPC.

At the April 2013 meeting, COD pending AAR publishing CPC.

CURRENT TF: P. Student (Chair), C. Machenberg, A. Richter

TF CHARGE:

REFERENCES:

Grounding Requirements for Tank Cars

Recent Activity:
At the July 2013 meeting, Chlorine Institute has provided the TCC a recommended change to the TF proposal. This recommendation was provided to the TCC prior to the meeting with the meeting material. S. McLeod stated that the TF would review the CI recommendation with the TF before coming to the committee with a final recommendation.

It has been note that the TDG requires that for goods having a primary or subsidiary classification of 2.1, 3, 4, or 5 measures are taken to prevent exposure of the dangerous goods to any source of electrical hazard and to dissipate static electricity;" It was suggested that making grounding lugs mandatory and of a specific performance design might fill this requirement.

JP Gagnon reported that TC concern is with resistance from tank to ground through the trucks. Alternative approach would include going from tank to ground without going through the truck. TCC mentioned that the tank bolster has always been the best place for dissipating static electricity. This issue at some point might be included in to Pamphlet 34. P. Student, K. Warner, A. Ash, and S. McLeod will head up the Task Force. Comments should be sent to Scott McLeod at scott.mcleod@cn.ca.

At the October 2012 meeting, TF provided information to AAR staff on October 17, 2012.

AAR received the following information on October 17, 2012 from the TF as is ready for consideration by the executive TCC:

Original
2.2.8.2 Electrical Grounding
All tank cars are to have two (2) welded electrical grounding lugs, accessible on opposite sides of the car, on the body bolster assemblies (BL and AR). The grounding lugs are to be made of stainless steel material, welded in place. The grounding lugs will be free of paint to ensure electrical continuity between the grounding lugs, bolster and tank shell. Additional bolted grounding studs or welded grounding lugs may be added on the car, except no grounding point will be in a location that hinders the safe operation of tank car loading / unloading. This requirement is in effect for tank cars ordered after Month / Day / Year.

Added edits for clarification in *Italic*:
2.2.8.2 Electrical Grounding
All tank cars are to have two (2) welded electrical grounding lugs, accessible on opposite sides of the car, *located on the inside horizontal plane of* the body bolster assemblies (BL and AR). The grounding lugs are to be made of stainless steel material, welded in place. The grounding lugs will be free of paint to ensure electrical continuity between the grounding lugs, bolster and tank shell. Additional bolted grounding studs or welded grounding lugs may be added on the car, except no grounding point will be in a location that hinders the safe operation of tank car loading / unloading. This requirement is in effect for *stub sill* tank cars ordered after Month / Day / Year.

At the January 2013 meeting, S. McLeod discussed the proposal in the background. Clarification has been provided within the proposal as requested by the TCC. The TCC would like the proposal to be reviewed by the TF again, specifically on the location of the grounding lugs location on the body bolster assembly. TF plans to have a finalized proposal by the April 2013 TCC meeting.

Chris Crisfulli and Chris Edmonds will be added to the TF.
J. Becker and G. Sandheinrich will be removed.

At the April 2013 meeting,

Action Taken: A motion was made, seconded, and passed to move proposal to executive TCC for consideration for approval. The executive committee had some comments and the TF plans to have a finalized proposal by July TCC meeting.

AAR received the Proposed Revised Language from CI via email July 9, 2013

The Chlorine Institute's (CI's) Transportation Issue Team has reviewed the proposal put forward by the task force and would like to propose revised language.

2.2.8.2 Electrical Grounding

All tank cars are to have two (2) welded electrical grounding lugs, accessible on opposite sides of the car, *located on the inside horizontal plane* of the body bolster assemblies (BL and AR). The grounding lugs are to be made of **a conductive material which provides solid grounding and are to be attached by a means which provides continuity as specified in M-1001 Section 4.3.6** ~~stainless steel material, welded in place~~. The grounding lugs will be free of paint to ensure electrical continuity between the grounding lugs, bolster and tank shell. Additional bolted grounding studs or welded grounding lugs may be added on the car, except no grounding point will be in a location that hinders the safe operation of tank car loading / unloading. This requirement is in effect for *stub sill* tank cars ordered after Month / Day / Year.

CI is not opposed to providing a standard location for grounding lugs to prevent exposure to electrical hazards and dissipate electricity, particularly for persons who may not be familiar with options for grounding on a tank car. However, we have a concern with the original proposal because it presents a specified design solution rather than performance criteria that should be met. The task force's proposal would require that the two grounding lugs on the body bolsters be stainless steel and welded in place. There is general opinion that there are other materials (i.e. brass and bronze) that provide a better ground than stainless steel material. Also, by using these other materials, welding does not become a necessary means of attachment to ensure a good ground. So long as a continuous solid ground can be achieved and the material is attached as specified in M-1001 Section 4.3.6, then the objective is met. By adopting the above revision, tank car owners would be allowed to select their preferred material and method to meet this requirement.

At the July 2013 meeting, Chlorine Institute has provided the TCC a recommended change to the TF proposal. This recommendation was provided to the TCC prior to the meeting with the meeting material. S. McLeod stated that the TF would review the CI recommendation with the TF before coming to the committee with a final recommendation.

Grounding Requirements for Tank Cars

CURRENT TF: S McLeod (Ch.), P. Student, K. Warner, A. Ash, W. Woodall, S. Murray, M. Untermeyer, C. Crisfulli, C. Edmonds, M. Richardson

TF CHARGE: Investigate Grounding Requirements for Tank Cars

REFERENCES: S McLeod 4/9/10, R. Kinsley (CI) 7/9/13,

Review Manway Cover Design for Non-Pressure Cars

Recent Activity:
At the July 2013 meeting, it was stated that the FRA reported during the April 2013 TCC meeting that changing out an eyebolt would be a qualification event. K. Alexy had stated during the meeting that the tank car owner must have in place acceptance criteria for the work and procedures to ensure 1) the correct bolt is used 2) the final product meets the owner's acceptance criteria.

The TF will decide based on the information provided by the FRA what the TF charge will be. The new TF chair will be R. Potje. Ron Lawler will be added. Work on charge.

This docket was opened at the request of the NAR TG to review the design and application of hinged and bolted manways with the goal of eliminating NAR's

At the October 2012 meeting, K. Dorsey reported that the TF work will be published in CPC.

At the January 2013 meeting, COD

At the April 2013 meeting, K. Dorsey stated that he will discuss with TF the mandatory change out of safety bolts at the time of qualification. J. Rader discussed the possible change to safety bolts in how they are fastened to the nozzle. Instead of having the eyebolt welded for securement maybe it shall be a mechanical clevis type pin (hinge pin).

At the July 2013 meeting, it was stated that the FRA reported during the April 2013 TCC meeting that changing out an eyebolt would be a qualification event. K. Alexy had stated during the meeting that the tank car owner must have in place acceptance criteria for the work and procedures to ensure 1) the correct bolt is used 2) the final product meets the owner's acceptance criteria.

The TF will decide based on the information provided by the FRA what the TF charge will be. The new TF chair will be R. Potje. Ron Lawler will be added. Work on charge.

CURRENT TF: R. Potje (Chr), D. Maechling, P. Student, A. Richter, J Becherer, J. Perez, A. Degutis, P. Brady, T. Sisto, F. Gonzalez, R. Triche, J. Engel, R. Lawler

TF CHARGE: Review the manway cover arrangement of non-pressure cars and make recommendations to eliminate NAR's.

REFERENCES: K Warner 4/21/09; D Maechling 5/24/10

Consider New Steels for Tank Car Tanks

Recent Activity:
At the July 2013 meeting, COD

This docket was created as a result of two independent dockets concerned with tank car tank materials. Docket T95.7-81 was created to review all tank car steels as to their suitability in the railroad environment. Many issues were resolved under that docket, which was closed in October 1991, after the publication of Report RA-03-9-59 entitled "Evaluation of New Steels for Tank Cars, Phase II". At the time the docket was closed, interest in opening another docket to further pursue improvements to TC128 steel was noted. Docket T95.23-93 was opened in July 1993 to consider possible changes to M-1002 regarding the maximum level of Columbium, or a combination of Columbium and Vanadium, permitted in TC128 Grade B steels.

It was decided at the March 1995 Committee meeting that docket T95.7.1-95 would be opened, with its main emphasis on the evaluation of microalloyed steels for use in tank car tank construction

At the October 2012 meeting, C. Hybinette reported that the TF met the week prior to the TCC meeting and stated that the TF is compiling data and when complete Roger Sims will summarize the information in a report. TF is reviewing whether or not low sulfur TC-128 will provide greater upper shelf energy. TF effort continues on getting samples of low sulfur TC-128 material. Inclusion content on steels is also being looked at by the TF. A matrix was developed regarding the properties of steels and improvement of properties for enhancements to puncture resistance. Carl Hybinette from Union Tank Car is the new TF chair.

At the January 2013 meeting, AD McKisic stated that the group is focused on TC-128 properties. New steel testing is being pushed back a little due to ATCCRP and evaluation of low sulfur TC-128B. The low sulfur TC-128 was produced by one of the mills by accident, and will be tested as part of the ATCCRP. It was stated that the low sulfur TC-128 analysis results show better charpy values.

At the April 2013 meeting, C. Hibynette discussed the efforts of the TF and provided a summary of these efforts to AAR. The TF continues to look at TC-128 ultra low sulfur. TF is looking for steels in the 002 sulfur range, typical range is 004. Steel cleanliness will be taken on at a later date. Post weld heat treatment needs are also being looked at because it plays a factor depending on the type of materials being used.

At the July 2013 meeting, COD

Consider New Steels for Tank Car Tanks

CURRENT TF: C. Hybinette (Chr), R. Sims, F Gonzales, L. Strouse, H Guzel, G. Sandheinrich, M. Manohar, B. Heitmann, B. Kowing, A.D. McKisic, C. Barkan, T. Treichel, P. McKeighan, P. Thompson

TF CHARGE: Investigate New Steels for Use in the Construction of Tank Car Tanks

REFERENCES: PJ Daum 1/21/04 (Handout); TH Dalrymple 5/19/03, 8/24/03, 9/10/03, 11/02/03, 11/03/03, 1/15/04, 1/16/04X3, 1/19/04, 3/28/04X2, 3/29/04, 5/26/04, 6/1/04, 6/9/04, 10/4/04, 10/15/04; TT Treichel 9/10/03, 11/10/03, 2/24/06, 10/11/06; G. Dahlman 10/16/03, 11/3/03, 2/9/04, 6/1/04, 6/8/04, 10/2/04; P Kinnecom 03/27/03, 03/28/03 (CPC-1150), 6/20/03 (CPC-1154), 8/25/03, 5/25/04, 10/19/06, 10/24/06; C Hybinette 1/6/05; P Whelan 1/13/06, 4/25/06, 10/10/06; M. Williams 7/21/08

Consider Modifications to Current Steel Specifications

Recent Activity:
At the July 2013 meeting, COD

This docket was separated from docket T95.7.1 to address modifications to current steel specifications for tank car tank fabrication.

At the October 2012 meeting, one item up for discussion is the yield point of TC-128 and whether or not 50 ksi steel is necessary in TC-128 in all cases. C. Hybinette from Union Tank Car is the new TF chair.

At the January 2013 meeting, AD McKisic stated that low sulfur steel is being tested. The process of producing this steel will be under discussion. The TF will also investigate the effect of lowering the yield strength.

At the April 2013 meeting, COD

At the July 2013 meeting, COD

CURRENT TF: C Hybinette (chr), R Sims, F Gonzales, L Strouse, H Guzel, G Sandheinrich, M Manohar, B Heitmann, B Kowing, A.D. McKisic, C Barkan, T Treichel

TF CHARGE: Develop Modifications to Current Steel Specifications

REFERENCES: PJ Daum 1/21/04 (handout), 7/19/05; TH Dalrymple 09/08/02, 5/19/03, 8/24/03, 9/10/03, 11/02/03, 11/03/03, 1/15/04, 1/16/04X3, 1/19/04, 3/28/04X2, 3/29/04, 6/9/04, 1/30/05, 2/8/05, 7/19/05, 7/20/05; TT Treichel 9/10/03, 11/10/03; M Manohar 6/24/04, 8/24/05; G. Dahlman 10/16/03, 11/3/03, 2/9/04; P Kinnecom 03/27/03, 03/28/03 (CPC-1150), 6/20/03 (CPC-1154), 8/25/03, 2/8/05, 6/24/05 (CPC-1169), 8/1/05 (CPC-1170), 8/13/07; P Whelan 1/13/06, 1/17/07 (handout), 2/4/08, 3/25/10

Tank Car Committee Meeting Schedule

Recent Activity:
At the July 2013 meeting, K. Dorsey discussed the upcoming TCC schedule which was provided in the docket.

TANK CAR COMMITTEE MEETING SCHEDULE

YEAR	DATE	MEETING	LOCATION	TOUR
2013	October 16-17	Subs	Pueblo/CO. Springs, CO.	
2014	January 22-23	TCC	Jacksonville, FL	
2014	April 16-17	Subs	Dallas, TX	
2014	July 16-17	TCC	Roanoke, VA	
2014	October 15-16	Subs	Atlanta, GA (Buckhead)	

At the October 2012 meeting, the TCC agreed to the following schedule:

2013 January 23-24 TCC Jacksonville, FL
2013 April 24-25 Subs Atlanta, GA
2013 July 24-25 TCC Chicago, IL

January changed from 16-17 to 23-24
April 24-25 Kansas City, MO instead of Atlanta, GA

AAR received an email and letter from Salco Products and Conbraco Apollo on December 7, 2012 extending an invitation to the Tank Car Committee to host one of the meetings in South Carolina.

At the January 2013 meeting,

October 16-17, 2013 Pueblo, CO/Colorado Springs
January 22-23, 2014 Jacksonville, FL
April 16-17, 2014 Dallas, TX
July 16-17, 2014 Roanoke, VA (Chicago, IL second choice)
October 15-16, 2014 Atlanta, GA

At the April 2013 meeting, K. Dorsey discussed the upcoming TCC schedule which was provided in the docket.

At the July 2013 meeting, TCC agreed to go to Roanoke, VA for the July 2014 meeting; however the dates were changed from 16-17 to the 23-24. TCC agreed to remove alternative Chicago for this meeting. In regard to the October 2014 meeting location in Atlanta, Buckhead will be considered a part of Atlanta when working out meeting logistics.
REFERENCES:

Recent Activity:
At the July 2013 meeting, the TCC agreed that a review of appendix P, the structure of the committee, subcommittee, and task force representation needs to be reviewed.

The current subcommittee working group assignments are now as follows:

Subcommittee 1 Chairman:	Harold Weber
Subcommittee 2 Chairman:	Mike Richardson
Appendix A/C Chairman:	Al Richter
Appendix A/C Vice Chairman:	Frank Reiner
Appendix M/GDE Chairman:	John Byrne
Appendix M/GDE Vice Chairman:	Jim Kozey
Appendix B/R/W Chairman:	Lou Oborny
Appendix B/R/W Vice Chairman:	Andy Ash
TQI Group Chairman:	N. Scott Murray
TQI Group Vice Chairman:	Kevin Flahive
Ax/NAR Group Chairman:	Paul B. Williams
Ax/NAR Vice Chairman:	Scott McLeod
Editorial Group Chairman:	Ken Dorsey

At the October 2012 meeting, COD

The following individual will replace the TCC member position previously held by Tony Manrique: Brian Paine, CIT Rail, Brian.paine@cit.com

At the January 2013 meeting, AD McKisic is the new member for RSI and Joe Perez is off. AAR needs both Brian Paine and AD McKisic bio's for the TCC ballot committee.

At the April 2013 meeting, COD.

At the July 2013 meeting, the TCC agreed that a review of appendix P, the structure of the committee, subcommittee, and task force representation needs to be reviewed.

CURRENT MEMBERS OF THE TANK CAR COMMITTEE
(As of January 2013)

Railroad Members in Order of Seniority

1. Patrick J. Student (Hazmat Committee Liaison), Director Hazardous Materials Management, Union Pacific Railroad Company (5/22/97)

2. Paul B. Williams, (**Chair**) Assistant Manager Hazardous Materials, Norfolk Southern Corporation (4/30/04)

3. Allen Richter, (**Vice Chair**), Manager Hazardous Materials, Conrail (6/22/06)

4. Lou Oborny, Union Pacific Railroad, Manager of Mechanical Engineering, Union Pacific Railroad, (11/01/07)

5. Andy Ash, Director, Dangerous Goods, Railway Association of Canada, (1/29/08)

6. Marco Antonio Gonzales Garza, Environmental Risk, Kansas City Southern de Mexico (04/15/09)

7. Scott McLeod, Dangerous Goods Officer, CN Railway (1/20/10)

8. Jim Kozey, Manager Regulatory Affairs, Canadian Pacific (7/21/10)

9. Jorge Francisco Gallardo Jiménez, Railway Analyst Engineering, Ferrocarril Mexicano (7/21/10)

10. Carl Akins, Manager, Environmental Engineering, KCS (11/24/10)

11. Chris Machenberg, Manager of Hazardous Materials Field Services, CSX (10/19/2011)

12. Bruce Siebold, System Mechanical Engineer, BNSF Railway, (7/18/12)

13. Jim Rader, Senior Vice President, Watco Compliance Services L.L..C. (ASLRRA), (7/18/12)

Association of American Railroads

14. Ken B. Dorsey, Executive Director – Tank Car Safety, Association of American Railroads (5/29/97)

Non-Railroad Shippers in Order of Seniority

15. Harold H. Weber, Director Industrial Programs, The Sulphur Institute (10/18/93)

16. R. Mike Richardson, Clay Producers Traffic Association (1/22/98)

17. Kirk L. Warner, Consultant, American Petroleum Institute (API) (1/1/04)

18. Frank X. Reiner, President, The Chlorine Institute (9/16/05)

19. N. Scott Murray, Manager Rail Planning & Operations Exxon Mobil (4/18/08)

20. Kevin Flahive, Director Rail Transportation , Koch Fertilizer Company (11/24/10)

Non-Railroad Tank Car Builder / Lessor in Order of Seniority

21. AD McKisic, Senior Director – Product Development, Trinity Rail (1/23/13)

22. Dave Maechling, Director of Fleet Operations , American Railcar Leasing (7/22/09)

23. Brian Paine, AVP – Fleet Maintenance, CIT Rail (10/24/2012)

REFERENCES: RE Fronczak 07/24/02, 09/23/02, 1/23/06, 6/22/06, 6/29/06, 10/04/06, 9/10/07; N. White 12/12/02, 7/7/10; D. Richmond 12/20/02: L Arlinghaus 03/31/03; P Kinnecom 03/31/03, 12/27/04, 1/23/06, 1/31/06, 3/30/06, 6/01/06, 6/14/06, 6/27/06, 9/19/06, 3/9/07; C Gordon 12/01/03; D Schoendorfer 4/30/04; S Elliott 4/26/04; K Shaver 9/16/05; P Guffain 1/20/06, 4/06/06; W Schoonover 3/28/06; P Daum 4/11/06; H Weber 4/12/06; R VanderClute 4/14/06; E. Harris 8/1/06; D Simpson 9/19/06; T. Heidkamp 3/9/07; P Kinnecom 8/30/07; T Schick 3/25/08

Review Appendix P or M-1002 (Tank Car Committee Procedures)

Recent Activity: NEW DOCKET

The TCC agreed to open this docket at the July 2013 TCC meeting.

This docket has been opened to review Appendix P of M-1002. Included in the review will be the structure of the committee and subcommittee as well as task force representation.

TF needs to be established

CURRENT TF:

TF CHARGE:

REFERENCES:

Proper Bar Configuration for GATX Underframe Cars

Recent Activity:
At the April 2013 meeting, COD pending the paper version being converted into electronic format.

This docket has been opened to facilitate communication of several instances of tank shell failure due to improper application of bottom reinforcing bars or improper modification of bars that had been initially correctly applied. In the cases investigated a common thread was that GATX engineering instructions had not been followed and unacceptable stress concentration had been created in the shell resulting in failure. Owners of GATX designed bar reinforced cars are to note that focused evaluation and inspection of the bar attachment welds and the configuration of the bars should be considered.

At the October 2012 meeting, K. Dorsey stated that once the paper version of the configuration is turned into electronic format it will be sent to GATX engineering department prior to creating a CPC. COD

At the January 2013 meeting, COD

At the April 2013 meeting, COD pending the paper version being converted into electronic format.

CURRENT TF:

TF CHARGE:

REFERENCES: