

**AGENDA - BACKGROUND**  
**TANK CAR COMMITTEE**  
**SUBCOMMITTEE 2**

Kansas City, MO  
April 24-25, 2013

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**Subcommittee 2 Tank Car Committee Docket**

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Review Chapter 1 Processes

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**Recent Activity:** New Docket was T25.9

This docket was opened to review the procedures for securing approvals identified in Chapter 1 of the AAR Manual of Standards and Recommended Practices, Section C Part III, Specifications for Tank Cars (M-1002). Included in this review will be the process for service trials.

At the January 2013 meeting, P. Student agreed to be TF chair.

CURRENT TF: P. Student (Chr.), N. Gambow, M. Clark, D. Gentile, D. Prince, K. Cook, D. Foley, MGM (TBD), S. McQueen, J. Rancor , G. Saxton, J. Jenkins, M. Forister

TF CHARGE:

REFERENCES:

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Rule 88.B Inspections

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**Recent Activity:**

At the January 2013 meeting, COD

A request was received from the ARB responding to a members petition to eliminate tank cars from the 85 hour trigger in Rule 88B. Tank cars currently have to have a Rule 88B inspection whether or not damage was observed during qualification and there are many cases where normal maintenance can trigger this as well. Motivation behind this is to remove redundant qualification inspection cycle for tank cars. Wording will be developed to return to ARB for consideration.

At the October 2008 meeting, J. Sbragia discussed the rule 88 inspection requirements for tank cars. L. Strouse from FRA mentioned the 85 hour rule provides an approach to prevent further damage to the car and would ensuring any damage experienced within that period would not lead to further damage. J. Sbragia indicated that the proposal attempted to capture the need for an inspection if acute damage was noted. L. Strouse, K. Alexy and J. Rader joined the Task Force.

The following proposal was received 8/13/2008 edited 10/16/08.

**Rule 88.B.2.a (existing)****2. Inspection and Repair**

- a. All cars released into service after rebuilding, after heavy repair, or as required by Note 5 must comply with the requirements of this section. Heavy repairs are defined for this rule as repairs exceeding 85 hours, including painting and lining. Purging, cleaning and water testing are not considered repairs in this rule.

**Rule 88.B.2.a, b (proposed)****2. Inspection and Repair**

- a. All cars, other than tank cars, released into service after rebuilding or heavy repair must comply with the requirements of this section. Heavy repairs are defined for this rule as repairs exceeding 85 hours, including painting and lining. Purging, cleaning and water testing are not considered repairs in this rule.
- b. Tank Cars must be comply with the following:
  - i. Tank cars must meet the requirements of Note 5.
  - ii. If a tank car was in an accident and shows evidence of structural or component damage. Including damage to running gear, that may adversely affect its ability to retain its contents, it is subject to the requirements of this section.
  - iii. If the tank car bears evidence of damage caused by a fire, it is subject to the requirements of this section.

At the January 2009 meeting, J. Sbragia will provide the alternative approach proposal to K. Dorsey. This proposal will eventually be submitted to the ARB committee. J. Sbragia is looking for support from the TCC before going to the ARB committee.

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Rule 88.B Inspections

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At the April 2009 meeting, J. Sbragia reported on the proposal introduced in October 2009 that excludes tank cars from the 85 hour trigger and relies on the 10 year inspection interval in appendix D. It was noted that there can not be any confusion on the definition of the term “accidental railroad damage” and how damages are to be determined at the shop level in the field manual.

At the July 2009 meeting, J. Sbragia reported that the proposal was finalized and approved by TCC and has been sent to Rules and Arbitration Committee for consideration. TCC awaits the ARB Committee results.

At the October 2009 meeting, K. Dorsey reported that TCC awaits the ARB Committee results. (Staff Note – ARB has added the appropriate verbiage to the Field Manual, however TCC will need to add damage criteria to appendix D. Possible task for T90.20)

At the January 2010 meeting, K. Dorsey reported that ARB has added the appropriate verbiage to the AAR Field Manual; however they did not include the section on damage initiated inspections. The TCC will need to update Appendix D to include the required criteria.

At the April 2010 meeting, K. Dorsey reported that ARB did not include the section on damage initiated inspections to the AAR Field Manual. The TCC will need to update Appendix D to include the required criteria.

At the July 2010 meeting, J. Sbragia and K. Dorsey will provide to ARB the wording related to the section on damage initiated inspections to the AAR Field Manual. Continue on Docket (COD) until the wording is added to the AAR Field Manual.

At the October 2010 meeting, K. Dorsey is working with ARB on wording modifications to the section of the rule detailing damage initiated inspections for tank cars. COD pending the appropriate words being added to the AAR Field Manual.

ARB has proposed an alternative wording as shown below. A ballot was issued on 1/6/11 which received several negative responses and several requests for clarification. It was decided by staff to hold this matter for discussion until the January 2011 meeting.

At the January 2011 meeting, K. Dorsey discussed the ballot that was sent out on January 5, 2011 reflecting ARB’s counter proposal. A motion was made, seconded, and passed to accept the ARB counter-proposal as written below. The TCC agreed to have K. Dorsey notify Tom Stahura at AAR of this decision.

On docket T5.21, the ARB Committee has made a counter-proposal to our Note 1.

ARB counter-proposal:

Note 1. All tank cars released into service from a certified facility must receive an inspection in accordance with the AAR Field Manual of the AAR Interchange Rules, Rule 88.B.2.b., if the car was in an accident and shows evidence of structural damage that may adversely affect the capability of the tank to retain its contents (e.g., buckling or corrosion), or bears evidence of damage caused by fire.

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Rule 88.B Inspections

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## Original TCC Proposal:

Note 1. All tank cars released into service after rebuilding or after heavy repair must receive an inspection in accordance with the *AAR Field Manual of the AAR Interchange Rules*, Rule 88.B.2.b. The term “heavy repair” means that the total labor hours on a tank car exceed 85-hours as a result of accidental damage. Accidental damage means a physical defect caused by fire, natural disaster or contact with another object during the operation of the tank, and is not limited to abrasion, corrosion, cracks, dents, distortions, defects in welds, and any painting, coating, and lining associated thereto. Tank and component qualifications required by 49 CFR Part 180, CGSB 43.147 Part III, and DOT-E 12095, including any purging, cleaning, and water testing associated with qualification, are not included in the 85-hours, nor are interior coating repairs included in the 85-hours when the tank interior is coated for the sole purpose of product purity.

At the April 2011 meeting, K. Dorsey stated that all that remains to do on this docket is to make the necessary change to Appendix D of MSRP C-III M-1002.

At the July 2011 meeting, K. Dorsey reported that the damage conditions need to be moved into Appendix D of MSRP C-III (M-1002). COD

At the October 2011 meeting, K. Dorsey stated that AAR continues to work on appendix D and when complete will publish a CPC. This docket will remain open until this work is published in Appendix D.

At the January 2012 meeting, COD pending the AAR publishing a CPC modifying Appendix D.

At the April 2012 meeting, COD pending AAR publishing CPC a modified Appendix D.

At the July 2012 meeting, COD for a CPC to be issued by AAR staff.

At the October 2012 meeting, K. Dorsey reported that inquiries have been made asking if it would be possible to allow stub sill inspections to have the same flexibility as 180.509 alternative inspection intervals. Rule 88b inspection is not the purview of the TCC and would have to be referred to the AAR Engineering Equipment Committee (EEC). The committee was also asked to review the mileage triggers for stub sill inspections.

At the January 2013 meeting, COD

CURRENT TF: J. Sbragia (Chr), K. Dorsey, L. Strouse, K. Alexy, J. Rader

CHARGE: Refine the proposed change to Rule 88 inspections

REFERENCES: J. Sbragia 8/13/08, 1/4/10; K. Dorsey 6/30/09, 1/6/10

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**AAR Interval Standards versus DOT Regulation**

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<b>Recent Activity:</b> See below.
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This docket was opened to discuss the possibility of allowing alternative inspection intervals for inspections required by AAR standards. The TF will review the AAR interval standards and determine how they relate to the DOT Regulations.

At the January 2013 meeting, K. Dorsey described this new docket which was also provided in the background. Additional TF members will be sought at the April 2013 TCC meeting. Currently there is no process for AAR mandated inspection intervals to be adjusted per a car owner's experience.

**CURRENT TF:** M. Richardson, J. Sbragia, K. Alexy

**TF CHARGE:**

**REFERENCES:**

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FRA Safety Appliance Standards

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**Recent Activity:**

At the January 2013 meeting, P. Student reported on AAR Circular Letter C-11878 published on January 8, 2013 with a 30 day comment period. The circular includes the information on safety appliances changes to tank cars. AAR forwarded the circular to TCC members during the meeting.

At the October 1999 videoconference, PJ Daum discussed a meeting held 10/5/99 to discuss T15.2-86 among RPI, AAR and FRA. FRA is agreeable to moving forward with a list of acceptable arrangements for safety railings for new and existing cars. A 7/7/99 letter from R Matthews to E English requested that FRA extend approval to repairs of railing ends with splice joints as shown in Field Manual Rule 81.E.3.a and Figure A of that rule. Union Tank Car Company presently has a waiver from FRA, dated 6/28/96, to perform such repairs.

By letter dated 12/10/99, WT Gose requested that the Tank Car, ARB and EEC Committees change Field Manual Rule 81 to allow spliced joints in side safety rails, top operating platform handrails, end platform handrails and all other handrails/guardrails. He included a series of proposals to that effect. By letter dated 3/8/00, WT Gose provided a revised proposal.

At the April 2000 meeting, PJ Daum reported that the MP&E group at FRA had drafted their technical bulletin that encompasses the proposals. It is under FRA legal review. At their recent meeting, ARB was unhappy that rip tracks repairing these appliances would need a QA program. ARB also had concerns over using AWS D15.1 as the welding reference. The Tank Car Committee received this as information.

FRA MP&E Technical Bulletin 00-06 was issued dated 8/7/00 to document accepted details and securements on tank car operating platforms.

At the August 2000 videoconference, WL Garfield reviewed the matter of FRA bad ordering cars found with grab irons welded to longitudinal running boards at the tops of end ladders, even though these grab irons are not required safety appliances. Car owners have long-standing approvals for this design and are asking for a meeting to resolve this. Mr. Garfield estimated that 20,000 cars have this feature, though no more are being built. There had been no formal response from FRA. JH Rader reported that Ed Pritchard's position is that, although it is not meant to be a safety appliance, it could be used as such and therefore must meet the rules. Mr. Rader has forwarded industry requests to Ron Newman, who is in charge of it at FRA.

By e-mail dated 9/5/00, PG Kinnecom reported that FRA had appointed Dan Buckley to manage the welded handholds issue for the MP&E group. Mr. Buckley had proposed a meeting with industry in late September. Mr. Kinnecom noted that FRA appeared to expect the cars to be modified as soon as possible.

Interested industry parties met with FRA on November 15, 2000 and found FRA's position to be inflexible. The car owners were requested to produce a plan to modify affected cars.



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FRA Safety Appliance Standards

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At the January 2001 committee meeting, John Swezey reported that RPI has a draft plan to present to FRA to either modify or remove handholds welded to longitudinal running boards on tank cars. The plan requests a 5-year implementation period for the program. The plan must receive FRA approval. Per email dated 1/8/01, John Swezey provided copy of the draft plan.

At the July 2001 meeting, P. Kinnecom gave an update on this docket. J Swezey informed the committee that an action plan (to modify cars by the next shopping) would be submitted to FRA by the end of September 2001. Trinity, GA and GE will handle this program with their customers. B. Fronczak noted the FRA's position and the actions that it dictates are not in the best interests of safety. The RPI proposal was forwarded to FRA dated 9/27/01.

By letter dated 9/27/01, FRA provided the program that they envision, including allowing railroad facilities to do the work.

At the October 2001 meeting, P. Kinnecom gave an update on this docket. Teleconference held October 22 between AAR and FRA has clarified the expectations of FRA. A letter to the FRA Administrator, expressing the concerns held by AAR and RPI, is being held, pending receipt of a response from FRA to the RPI proposal. J. Swezey will serve as the focal point for RPI on this issue.

Via letter dated 11/15/01, FRA advised that they would not take exception to handhold attachment pads welded to running boards, provided they were in accord with FRA's Technical Bulletin FRA-2000-6, Figures 10 and 11, and provided that handholds were mechanically fastened to pads. Also, while acknowledging that the handholds in question are not specifically required per 49CFR231.8, FRA requested that they be replaced on cars that had been modified to remove them. Finally, FRA took exception to the RPI proposal to remove handholds and questioned the timing of any program.

At the April 2002 meeting, J Swezey reported to the committee that he is drafting a reply to the FRA's letter on the top hand grab issue. The letter should be in to FRA prior to the July 2002 meeting. He will be asking that the figures detailing the acceptable feature be reinstated and for clarification of some statements from FRA. GA will be initiating a program to replace any grabs that were removed.

At the July 2002 meeting, it was reported that J Swezey will be in Washington D.C. the last week in July. At that time he will meet with FRA to progress this matter.

By email dated 8/8/02, PJ Daum provided copy of FRA letter of 7/29/02, wherein FRA advised they take no exception to splice repairs to side safety rails, platform handrails, and operating platform safety rails, provided repairs are in accord with drawing X-6994 and are performed at AAR-certified Class A, B, or C facilities.

At the October 2002 meeting, J Swezey reported to the committee that the handhold figure would be reinstated in a technical bulletin. GATX will reapply hand grabs that were removed at next shopping. Docket is PIS for FRA reinstating figure.

At the January 2003 meeting, J. Swezey recommended this docket be placed in suspense. FRA confirms that it has received the proposal and will incorporate Figure 12.

At the July 2010 meeting, the TCC agreed to re-instate this docket.

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FRA Safety Appliance Standards

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At the October 2010 meeting, P. Student provided a presentation on the prototype application of safety appliances on tank cars. He discussed the NPRM that was issued to amend the regulations related to safety appliance arrangements on rail equipment in a manner that is expected to promote the safe placement and securement of safety appliances on modern rail equipment by establishing a process for the review and approval of existing industry standards. It currently appears that operating platform mid-rails and toe plates will remain optional but provisions for their application detailed in the new regulation. The comment period on the NPRM has closed and the rule making is in the final stages. The hope is to have a final rule making by the end of October 2010. COD

At the January 2011 meeting, P. Student reported that the rulemaking is expected to be published within the next few months. The base standard and tank car safety appliance standard should be the first two published.

At the April 2011 meeting, this docket was COD pending the rulemaking expected to be published by FRA in the upcoming months.

At the July 2011 meeting, P. Student stated that the TF meet recently and discussed concerns with some of the safety appliance standards in regard to clearance issues and pinch points. The TF might have to go back and change some of the dimensions to fit in the envelope. The TF is actively reviewing the standard. Mr. Student mentioned that Transport Canada has been involved in the safety appliance TF.

At the October 2011 meeting, P. Student updated the committee on the safety appliance TF efforts. Safety Appliance TF is having AAR petitioning covered hoppers, box cars, and tank cars to be first on the list for changes to the safety appliance standards. The petition should be filed in the next few weeks. Tank cars with side ladders are included.

At the January 2012 meeting, P. Students reported that the task force met in Jacksonville, FL last week and reviewed the drawings for tank cars with end ladders and the drawings for running boards. The TF needs to review the differences between what is written in the current regulations and what is in the standards. For example, the measurement, appliance locations on the car and verification of typical dimensions and explanation of terms. If the FRA adopted this petition in March 2012, it would have an effective date of January 1, 2014.

At the April 2012 meeting, P. Student stated that the tank car safety appliance standard supporting documents have been submitted to AAR. If there is a deviation from the regulation there is a comparison map provided within the supporting documents. The TF will work with AAR on a petition to FRA which is expected to be submitted in July. P. Student mentioned that there is a UTLX car that is to be built soon implementing the new tank car safety appliance standards. TCC agreed that this docket be moved from executive to the tank car committee subcommittee docket.

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FRA Safety Appliance Standards

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At the July 2012 meeting, P. Student reported that the appendix has been split into two. One for tank cars with side ladders and working one for end ladders. Work has been submitted to AAR for submission to DOT for approval. Hope to finish up end ladder work later in the fall for approval and comment. FRA said once the standard has been approved that it is effective optionally. AAR: The year the standard is approved it will be required the first day of the second year after the standard is approved. Once approved by FRA, it would be accepted by AAR. TCC prefers a clear date for the new requirement. Railroads want the new design as soon as possible. The Next Generation Tank Car (NGTC) has the new safety appliance standard applied. The EEC did vote to forward this to DOT.

At the October 2012 meeting, P. Student updated the committee on changes made to the way car types were being presented to FRA. Now all proposals have to be sent in as one package. All 11 car types will be included in a recommendation by the TF. The TF plans to meet in November 2012 to work on this recommendation.

At the January 2013 meeting, P. Student reported on AAR Circular Letter C-11878 published on January 8, 2013 with a 30 day comment period. The circular includes the information on safety appliances changes to tank cars. AAR forwarded the circular to TCC members during the meeting.

REFERENCES: ER English 8/7/00; RA Matthews 9/27/01; PG Kinnecom 6/15/00 (2), 6/30/00, 7/26/00, 8/11/00, 9/5/00, 9/28/00, 10/3/00, 6/28/01 (X2); WT Gose 12/10/99, 1/27/00, 2/16/00, 3/8/00; WL Garfield 6/15/00, 6/16/00, 6/27/00; E Pritchard 6/26/00, 9/27/01, 11/15/01, 7/29/02; P Krupewicz 7/11/00; JD Sigler 7/26/00; RE Fronczak 10/22/01; J. Swezey 1/8/01; PJ Daum 8/8/02.

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**Brackets Welded Directly to Tanks**

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**Recent Activity:**

At the January 2013 meeting, J. Byrne reported that GE has inspected over 200 tank cars and found no cracks. J. Byrne stated that a design standard would need to be created to require pads. An additional through shell crack originating at a brake support incident in Canada recently occurred; specifically it was a fatigue crack that is a couple of feet long in length. Report will be published by TC on this issue. The TF plans to work on a proposal for pads for new cars for certain applications.

This docket has been opened to discuss two TSB Canada reports indicating potential issues with non-jacketed non-pressure cars built prior to 1990 with brackets welded directly to the tank shell. TSB studied two separate instances of shell failures to a greater or lesser degree that originated at brackets welded directly to tanks. Cars built after 1990 should have pads for this type of attachment.

At the July 2011 meeting, K. Dorsey stated that the Transportation Safety Board (TSB) reported on three instances of shell failures that originated at brackets welded directly to the tank. AAR received a letter from Transport Canada asking the AAR to look into the issue. There are roughly 90,000 non insulated tank cars built prior to 1990 that are subject to these brackets. Typically this is not an area inspected during qualification. On a related issue Transport Canada plans to issue guidance that visual inspection is not allowed for sill reinforcing pad to tank inspections. TC agreed to notify AAR when this happens so that AAR can send out a CPC to the industry. TC suggested that care should also be taken when selecting the NDT method used to inspect other pad to tank welds as cracks may have run under the pad and not be easily identified using visual techniques. The TSB report, when made available, will be distributed by AAR.

Industry plans on sharing their qualification and inspection procedures with each other on these welded brackets so that everyone is performing the inspections the same. The type of inspection method selected in the future should be based on data that comes from a sampling of these cars with these bracket designs. Specifically the bracket welded directly to the tank is of interest on non-pressure cars. Liquid penetrate and mag particle is what will be used.

Motion made, seconded, and passed that all affected car owners agreed to follow the same inspection methods and procedures that are put together and data will be provided by the October TCC meeting.

AAR will send out an MA on the Richmond built stub sill design. The lead paragraph will include the statement that this configuration is susceptible to this type of defect and that car owners should consider the same type of inspections that is outlined in their maintenance plans.

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Brackets Welded Directly to Tanks

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At the October 2011 meeting, K. Dorsey reported that brackets welded to the tank directly should get an NDE inspection at least once during its life. J. Byrne reported that of the 33 cars recently inspected no parent metal cracks were detected; however one car had a crack in the throat of the weld and it is believed that this was due to the quality of the weld. J. Sbragia reported that they just started the program up a month ago and currently does not have any data to share. J. Byrne stated that they will work with all RSI members of their procedure so that data collection can be done in a similar fashion. The TCC requested that each car owner is expected to provide a report on this issue by the January 2012 TCC meeting. TCC agreed to create a TF to discuss this issue.

AAR received via email from John Byrne (GE Capital Rail Services) on 11/16/2011 the two attachments listed below. The first attachment is procedures for inspecting the brackets welded directly to the tank. This document was provided to AAR and to the RSI members. The second document is a report on the inspection efforts.

1. SIP\_30.3\_MT-PT\_Tank\_Welds\_\_08-23-2011\_Rev\_001.pdf
2. SIP 30 3 Cars Completed.xls

At the January 2012 meeting, K. Dorsey discussed the current requirements for reinforcing pads outlined in section 15 within Appendix E of M-1002. Ken specifically discussed section 15.1 which outlines the requirements for use of reinforcing pads. The section states that for brackets and attachments, reinforcing pads are required, if, when welded directly to tanks, they could cause damage to the tanks, either through fatigue, over-stressing, or denting or puncturing in the event of an accident. Ken also mentioned that section 16.1 of Appendix R of M-1002 has requirements for welded attachments.

Ken stated that there are four options in handling the issue.

1. Do nothing
2. Grind the weld down
3. Remove the bracket 100% of the time and add pad
4. Inspect the weld and if defect noted handle accordingly.

Least favorable is option 1 followed by option 2 which leaves option 3 or 4. Keeping in mind that if option 3 is selected the removal of the bracket and attachment of a pad has to be carefully performed by a AAR certified tank car facility.

J. Byrne of GE stated that they have inspected 67 tank cars and have found no parent metal cracks. The cars inspected have a range of miles put on them. Dye-penetrant and Mag Particle were the NDT methods used to accomplish the inspections. Currently, GE has selected option 2 from above (grinding down the weld). J. Sbragia of GA stated they have inspected 13 tank cars. The estimated number of tank cars having this specific type of bracket welded directly to the tank is approximately 20,000.

It was stated during the meeting that all builders are using pads on new tank cars for the securement of brackets.

AAR will work on wording that should be added to M-1002 to standardize the requirements for welding brackets directly to the tank. Tank Car Committee agreed that a TF should be established.

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Brackets Welded Directly to Tanks

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At the April 2012 meeting, K. Dorsey stated that this docket was opened to discuss potential issues with brackets being welded directly to the tank that result in shell failures. The fleet owners are inspecting their fleets to see if this is a systemic issue. The committee discussed the four options provided in the docket on how to handle the issue.

The following individuals will be added to the TF: John Byrne (TF chair), Glenn Sandheinrich, Larry Strouse, Mike Untermeyer, JP Gagnon, Dave Ronzani, John Sbragia, and K. Dorsey

At the July 2012 meeting, J. Byrne gave a report on the GE inspection program, which has looked at 201 cars from July 2011 to the present date. No parent metal cracks have been found by the program. There have been two cars rejected for weld quality issues. There was a lot of variation in weld base size between ½” and ¼” with the rest falling above or below. Should incorporate variation into the owner’s maintenance plans. 40 inspection results were received from ARL and 36 inspections from GATX. One from GE defect was noted in the throat of a weld. GE did not recommend requiring mag particle inspections if it was felt that another process was sufficient. It was noted that inspection of welds to brackets and to tanks should be incorporated into the owners inspection program. TF charge was changed to require the inspection of brackets welded directly to tanks and address new cars. Add Chris Crisafulli to TF.

At the October 2012 meeting, K. Dorsey stated that this docket is a result of recommendations received from Safety Transportation Board (STB) of Canada. There is no action at this time for all cars with brackets welded directly to the tank; however it will be discussed within the TF. Preliminary indications are that cracks originating from bracket welds appear to be isolated events and some additional mechanism, other than fatigue, is needed to initiate a failure.

At the January 2013 meeting, J. Byrne reported that GE has inspected over 200 tank cars and found no cracks. J. Byrne stated that a design standard would need to be created to require pads. An additional through shell crack originating at a brake support incident in Canada recently occurred; specifically it was a fatigue crack that is a couple of feet long in length. Report will be published by TC on this issue. The TF plans to work on a proposal for pads for new cars for certain applications.

**CURRENT TF:** John Byrne (TF chair), Glenn Sandheinrich, Larry Strouse, Mike Untermeyer, JP Gagnon, Dave Ronzani, John Sbragia, C. Crisafulli, and K. Dorsey

**CHARGE:** Review the M-1002 requirements for attachments welded directly to tanks in light of the TSB recommendations.

**REFERENCES:** TSB Canada (617-05/11) 2/5/11, (617-07/11) 25/5/11, J. Byrne (11/16/11)

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Review of Volume Determination for Tank Cars

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**Recent Activity:** See Below.

This docket was open to discuss devices used to measure the volume of product within a tank car. It was noted that several new devices have been developed to determine the interior volume of a vessel that might simplify the process as currently stated in M-1002. The TF will investigate alternative methods to determining tank car volumes.

At the January 2011 meeting, K. Dorsey reported that this docket was open to discuss devices used to measure the volume of product within a tank car. TCC agreed to form a TF and will seek participation during the April 2011 TCC meeting.

Staff Note: Add K. Warner, C. Crisafulli, and ARI (TBD)

At the April 2011 meeting, K Dorsey stated that API procedures are being used to measure the volume in tank cars. The following individuals will be added to the TF: C. Edmonds, T. DeKoning, and C. Machenberg.

At the July 2011 meeting, this docket was COD.

At the October 2011 meeting, no report was provided. D. Edgel requested to have TF members provided to him.

At the January 2012 meeting, K. Dorsey stated that the process for measuring the volume of a tank could be modernized. K. Warner provided the API standard to D. Edgel.

At the April 2012 meeting, D. Edgel stated that the TF will have something prepared by the July 2012 TCC meeting.

At the July 2012 meeting, This has come up three times in the last 10 years. Currently M-1002 references the API standard for determining volume in the tank. As API uses volume for commercial purposes they have agreed to review any recommendations made by this TF. There are new technologies being developed to measure volume that the TCC has been asked to review. Currently there are differences of as much as 229 gallons depending on the technique used by the manufacturer when a new cars volume is established. A Midland representative will be added to the TF. Shane Skelton is the new API representative for transportation issues.

At the October 2012 meeting, D. Edgel stated that they would like to get a member from API to participate on the TF. At this point in time there is no specific type of equipment being evaluated or is there a desire flexibility being pursued.

At the January 2013 meeting, COD

**CURRENT TF:** D. Edgel (Chair), K. Warner, C. Crisfulli, C. Edmonds, T. DeKoning, and C. Machenberg.

**TF CHARGE:** Determine if the current M-1002 requirements for determining the volume of a tank need to be modified or expanded.

**REFERENCES:**

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HM-201, Detection and Repair of Cracks and Other Defects

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**Recent Activity:**

At the January 2013 meeting, the TF is working on a proposal on appendix R.

This docket was opened in 1987 to study and respond to HM-201 Advance Notice of Proposed Rule Making (ANPRM) entitled "Detection and Repair of Cracks, Pits, Corrosion, Lining Flaws, Thermal Protection Flaws and Other Defects of Tank Cars". HM-201 NPRM was issued in the Federal Register of September 16, 1993.

This proposal, along with HM-175A, was combined in one Final Rule, which was issued in the Federal Register of September 21, 1995. Highlights of the rule include the following:

- Provides that an acceptable damage-tolerance and fatigue evaluation include other types of damage mechanisms and is supported by test evidence and, if available, by service experience.
- Requires that each tank car be given an inspection and test, in accord with the requirements contained in this final rule, before or in conjunction with the next scheduled tank hydrostatic pressure test.
- Directs FRA, during its inspection activities, to assess the need for a Rule Making to (1) require owners to retain car mileage records and (2) inspect their tank cars before the cars accumulate more than 200,000 miles of railroad service.
- Requires that the bottom shell of fusion welded tank cars, in lieu of hydrostatic pressure tests, be inspected periodically by appropriate NDT techniques such as ultrasonic, radiographic, magnetic particle, dye penetrant and optically aided visual inspections. This final rule does not acknowledge acoustic emission testing as an authorized NDT technique.

At the October 1995 Committee meeting, PG Kinnecom and JH Rader advised the Committee regarding the new rule. Highlighted was the Frequency of Testing and Inspection requirement, which is to be 10 years for tanks and service equipment (filling/discharge, venting, safety, heating and measuring devices) in non-corrosive service. Equipment on cars carrying corrosive commodities, whose tanks are lined or coated, is to be inspected every 5 years, while these tanks maintain a 10-year inspection/test schedule. The lining/coating on such cars, when applied to protect the tank from the commodity, is to be inspected on an interval determined by the owners, not to exceed 10 years. Finally, non-lined/coated tanks in corrosive service, must observe an inspection/test interval derived from the formula presented in 49CFR180.509(c)(3)(ii). This interval is not to exceed 10 years.

At the January 1999 meeting, JH Rader reviewed his synopsis of DOT E-12095 that had been provided by e-mail on 10/27/98 and was attached to the January 1999 background pages.

This docket was not discussed at the April 1999 videoconference.



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HM-201, Detection and Repair of Cracks and Other Defects, (Continued)

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By letter to JH Rader dated 6/2/99, PM Brady noted that safety relief valves on anhydrous ammonia cars are responsible for a relatively high fraction of non-accident releases of hazardous materials, yet under HM-201, commodities such as ammonia that are not corrosive to the tank are subject to a 10-year safety valve test cycle rather than five years as required previously (Ref. Part 180.509(c)(3)). He requested that FRA review DOT-E12095 in light of the NAR experience. In a related matter, PG Kinnecom noted to PB Williams in an 6/17/99 e-mail that DOT-E11941 allows a 10-year phase-in for chlorine cars to meet Part 180 qualifications, and during the phase-in period, these cars are allowed a 10-year life on tank and pressure relief valve tests, compared to a historical two-year interval.

At the July 1999 meeting, JH Rader reviewed PM Brady's concerns about a 10-year inspection interval. He pointed out that the rules also require that inspection intervals be adjusted to be commensurate with observed performance. Thus, if a particular system is failing in cycles of less than 10 years, the interval must be reduced appropriately. With respect to chlorine cars, ME Lyden pointed out that the chlorine industry will be following intervals that are much less than the 10 years allowed by DOT-E11941.

At the October 1999 videoconference, JH Rader reported that rule development with respect to DOT E-12095 is underway at DOT and TC. The goal is to get it out before the exemption expires.

At the April 2000 meeting, JH Rader reported that a revised exemption E-12095 is expected by October 2000. Mr. Rader intends to solicit comments before the revised version is published. The revision will clarify requirements for inspection after abusive impact and for misloading of a lined/coated car. Each individual party must apply for extension 60 days prior to expiration 10/1/00. The exemption will eventually become a rulemaking. Canada is already close to proposing a rule.

By e-mail dated 7/10/00, JH Rader provided a revised draft of exemption DOT E-12095, reflecting the changes made at a task force meeting held 6/22/00.

At the August 2000 videoconference, under T59.1, JH Rader noted there was to be a meeting the following week on needed changes in DOT Exemption E-12095. Upcoming miscellaneous rulemaking HM216A will include the revised E-12095, among other changes. It was suggested that E-12095 will be more time-consuming and perhaps should be dissociated from the truly editorial matters.

On 8/7/00, RSPA extended E-12095 until 4/30/02.

At the October 2000 meeting, RM Richardson reported that a meeting took place to continue to refine E-12095B. RSPA's (PHMSA) extension of the exemption has removed some urgency.

At the January 2010 meeting, C. West Freeman reported on HM-233A: Incorporation of Special Permits into Regulation. The NPRM was published on December 22, 2009. Written comments should be submitted on or before February 22, 2010. It was mentioned that efforts are being made to incorporate DOT SP-12095 and SP-7616.

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HM-201, Detection and Repair of Cracks and Other Defects, (Continued)

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At the April 2010 meeting, K. Dorsey reported that efforts are being made to incorporate DOT SP-12095 and SP-7616 into a DOT rulemaking. T. Phemister had mentioned that it is not part of HM-233A but will be handled in a separate activity.

At the July 2010 meeting, K. Dorsey reported that SP-7616 is pending DOT rule making. COD

At the October 2010 meeting, K. Dorsey reported that SP-12095 is pending DOT rule making. COD

At the January 2011 meeting, K. Dorsey reported that SP-12095 is pending DOT rulemaking. The rulemaking is expected soon. COD

At the April 2011 meeting, N. Scott Murray reported that this docket is pending DOT rulemaking. K. Alexy (FRA) reported that HM-216B which should be published soon should include the incorporation of SP-12095.

At the July 2011 meeting, this docket was COD.

At the October 2011 meeting, S. Murray stated that this TF work is pending the outcome of federal rulemaking HM-216B therefore COD.

At the January 2012 meeting, K. Dorsey stated that AAR will open a new docket on the discrepancy found in Appendix R of M-1002 paragraph 10.5.

(Staff Note: The Appendix W TF (T80.2.4) May have addressed this issue in a future proposal.)

At the April 2012 meeting, S. Murray stated that this work is to be addressed under Appendix R of M-1002 under paragraph 10.5. Ken stated that there is clarification needed in this paragraph. The TF will determine whether weld overlay should be selected over weld insert. It was stated during the January 2012 TCC meeting that a new docket would be opened; however that did not occur.

At the July 2012 meeting, table R25.2 was developed however there is some concern about whether the table is easy enough to use by shop personnel. Paragraph 10.5 will be clarified to clearly address defect size questions. COD

At the October 2012 meeting, K. Dorsey stated that there is confusion in table R25.2. M. Untermeyer stated R3.1 and R25.2 is being worked on to provide clarity.

At the January 2013 meeting, the TF is working on a proposal on appendix R.

REFERENCES:

Welding Task Force Proposals

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**Recent Activity:**

At the January 2013 meeting, K. Dorsey discussed the proposal provided in the background.

A motion was made, seconded, and passed on the proposal as provided in the background. AAR will draft a CPC for comment.

Comment on page 19. D15.1 is now available instead of not available.

At the October 2003 meeting, M. Untermeyer reported that R. Johnson had replaced J. Minton on the task force. The working group agreed to move the proposals of 9/22/03 forward to the committee.

At the January 2004 meeting, the 9/22/2003 proposal was accepted.

At the April 2004 meeting, M. Untermeyer reviewed the proposal dated 3/18/04. This docket has been progressed for tank car committee's consideration. The charge of docket T40.19, "Consider the best Practice for Welding Stainless Steel Fittings to Carbon Steel Tanks", has been folded into this docket.

At the October 2004 meeting, M. Untermeyer discussed the 9/13/04 proposal. There was no agreement reached on paragraph 10.5.1, "All position qualification for plate welding". An individual from Procor will be added to the Task Force. The remainder of the proposal is clarification of current wording which the committee took no issue with.

At the January 2005 meeting, the committee agreed to the proposal numbers 2 and 3; i.e., W12.8.1 and W13.4.1 from the proposal dated 9/13/04.

At the April 2005 meeting, M. Untermeyer reported that the task force has decided not to pursue the pipe welder type qualification. Draft circular CPC-1166 was reviewed by the task force and accepted. The draft included the 9/22/03 and 3/18/04 proposals.

CPC-1166 was issued dated 4/28/05 requesting public comment on proposed revisions to Appendices M, R, and W.

At the July 2005 meeting, this docket was COD for task force work. (Staff note – CPC-1170 was issued dated 8/1/05 to implement revisions to M-1002, including Appendix W.)

At the October 2005 meeting, M. Untermeyer noted that ASME standards had been used as a basis for proposed paragraph W10.2.3. The committee agreed to adopt the proposal as shown below.

At the April 2006 meeting, Mike Untermeyer discussed the current (3/13/06) task force proposal. The task force recommended that the prohibition of temper bead welding be extended to non-pressure car tanks made of TC128 steel. The subcommittee agreed that the current proposal be moved to the executive committee. At the executive session the committee requested clarification of the AWS 6G qualification reference, and they indicated that Appendix R rewrites by this TF should be limited to welding issues.

Welding Task Force Proposals (continued)

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FRA was recorded as opposing the use of 6G qualification for all welding positions. Steve McCullough and Jim Minton have been added to this task force.

At the April 2006 meeting, Mike Untermeyer discussed the current (3/13/06) task force proposal. The task force recommended that the prohibition of temper bead welding be extended to non-pressure car tanks made of TC128 steel. The subcommittee agreed that the current proposal be moved to the executive committee. At the executive session the committee requested clarification of the AWS 6G qualification reference, and they indicated that Appendix R rewrites by this TF should be limited to welding issues. FRA was recorded as opposing the use of 6G qualification for all welding positions. Steve McCullough and Jim Minton have been added to this task force.

At the July 2006 meeting, the committee agreed to adopt the proposal shown below excluding the reference to 6G qualification. The TF is asked to provide further information and justification concerning how that test relates to welding on tank car tanks.

At the October 2006 meeting, M. Untermeyer discussed the 6G welding recommendation and agreed to provide the committee with background justification for this type of welder qualification. The group then discussed the need to stamp welds (W15.7.1) or if an alternative method could be used. The FRA representatives indicated that they would like to see this practice continued.

At the January 2007 meeting, K. Dorsey reviewed the discussion concerning 6G weld qualification testing and weld stamping. This docket is COD for TF work.

At the April 2007 meeting, during the working group session M. Untermeyer discussed the acceptance of the 6G welder qualification standard by numerous organizations. The FRA representative felt that it provided a poor representation of the types of welds used during the construction of tank cars. After discussion, it was agreed to progress the newest proposal to the committee. At the committee meeting, K. Dorsey reviewed the discussion concerning 6G weld qualification testing and weld stamping. The committee agreed that there would be no change to the welder qualification requirements at this time. The committee asked for time to review the newest proposal as it represented a large change to Appendix R. This docket is COD for TF work and committee review of the current proposal.

At the July 2007 meeting, the proposal received via e-mail dated 8/31/06 (shown below), was adopted by the committee. The committee is still not comfortable with the 6-G welding test and it will not be adopted at this time. T. Dalrymple, M. Richardson and J. Byrne will solicit comments from repair facilities on the proposed changes to Appendix R.

Via e-mail dated

At the October 2007 meeting, the proposal covering 6g Welder Qualification and changes to Appendix R, received 3/6/07 and revised 7/13/07 was moved to the committee for consideration.

At the January 2008 meeting, the committee accepted the proposed rewrite of Appendix R. J. Byrne reported that the new Appendix R format didn't pose any significant issues for shop personnel. The second proposal discussed by the committee will be sent back to the task force to consider changing paragraph W15.1, visual acuity requirements. COD

Welding Task Force Proposals (continued)

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At the April 2008 meeting, the committee agreed to the proposal shown on p. 233 with edits to table W3 eliminating the Special position entry.

At the July 2008 meeting, this docket was COD for further TF work

At the October 2008 meeting, the TF agreed to work with K. Dorsey of AAR consolidating the proposals. M. Tate from Alltranstek, L. Batis, and D. Ronzani were added to the TF.

At the January 2009 meeting, it was reported that the TF agreed to work further on consolidating their proposals into one proposal. TF should have a proposal at the April 2009 TCC meeting. Rewrite of T, W, and R were approved and awaiting technical writer reviews. AAR is issuing CPC's as required to replace sections in the MSRP's. COD

At the April 2009 meeting, M. Untermeyer reported on the proposal provided in the docket. It was noted that a visual acuity test assures the sight of the person inspecting the welds is sufficient to inspect the welds. Trinity feels that this is not a value added proposal and ask the TCC to reject the proposal. T. Phemister mentioned that everyone that checks welds needs to be qualified. The task force agreed and recommended to the subcommittee for approval. The subcommittee agreed to move the proposal to the committee.

At the July 2009 meeting, K. Dorsey reported that there are several edits being made to the proposal. The proposal includes visual acuity test for welders. The TF was not unanimous in its acceptance of the proposal and Trinity Industries has asked that the proposal not be adopted by the Executive committee. AAR will send out the proposal vial letter ballot to the TCC. FRA would like a copy of the ballot and a copy of the objection letter.

At the October 2009 meeting, M. Untermeyer reported on the proposal provided in the docket in regard to visual acuity for welders. The TF made a motion to move this proposal to the executive committee, seconded, and passed.

At the January 2010 meeting, K. Dorsey reported that AAR is re-writing Appendix R and W. A CPC will be issued once both appendices are completely revised. The plan is to issue the CPC before the April 2010 TCC meeting.

At the April 2010 meeting, K. Dorsey reported on the recent CPC-1212 published on April 15, 2010 which includes changes to appendices R, W, M, and Y of M-1002. Comments on the revisions of these appendices are due by May 15 2010. TF members reported that they have already started their review of appendix W and plan to provide both editorial and correction comments to AAR.

At the July 2010 meeting, K. Dorsey reported that comments have been received by AAR on CPC-1212 and TF members plan to review comments and provide a proposal by the October TCC meeting.

At the October 2010 meeting, M. Untermeyer reported that the TF met recently. There are no TF proposals at this time. AAR is to publish a new CPC following the comments received on CPC-1212. COD

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Welding Task Force Proposals (continued)

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At the January 2011 meeting, K. Dorsey has to incorporate the new draft proposal from the TF into a CPC and send it out for comment.

At the April 2011 meeting, M. Untermeyer reported that the TF met recently and reviewed Appendices R and W of MSRP C-III M-1002. The TF awaits AAR's action to publish a CPC incorporating the TF proposal. The TF plans to recommend in a future proposal the possibility of removing overlay techniques no longer recognized.

At the July 2011 meeting, K. Dorsey stated that the TF is working on all the comments received on appendix T. Once they incorporate address all comments a new proposal will be considered. This work once finalized will lead to changes in Appendix T of MSRP C-III (M-1002).

At the October 2011 meeting, M. Untermeyer reported on the proposal which was provided as a handout. Recent TF discussion has taken place on the weld overlay temper B. This technique is not allowed on TC-128 material. TF plans to work on an alternative proposal.

**AAR received the following proposals via email on 3/30/12 from M. Untermeyer**

**DOCKET T80.2.4 TASK FORCE PROPOSALS (Appendix W and Appendix R)**

**Task Force Members: Mike Untermeyer (Chair), Dennis Allbritten, Larry Strouse, Randy Johnson, Chris Meeker, Chris Gamblin, David Smook, Alan Willaredt, Vernon Walker, Mike Tait**

**1.) W16.2.6 / PWHT REQUIREMENTS**

**PRESENT:**

**16.2.6 Postweld heat treatment**

**A change in the postweld heat treatment temperature and time cycle range specified for ferrous materials. The time cycle may be specified as varying with thickness and with time at temperature.**

**For example: 1 hour per inch (1 hour per 25.4 millimeters) of thickness; and as shown in Table W17**

**PROPOSED:**

**16.2.6 Postweld heat treatment**

**A separate procedure qualification is required for each of the following:**

**(a) No PWHT**

***Note: Alternate PWHT times and temperatures listed in Table W17 may be used without welding procedure requalification.***

**(b) PWHT within a specified temperature range.**

**Justification: Clarification of PWHT as an essential variable for procedure qualification.**

2.) Add the following terms to the “Definitions” section of Appendix W:

**Preheat:** The heat applied to the base metal or substrate to attain and maintain temperature.

**Preheat temperature, welding:** The temperature of the base metal in the volume surrounding the point of welding immediately before welding is started. In a multipass weld, it is also the temperature immediately before the second and subsequent passes are started.

**Weld surfacing or weld buildup:** The application by welding of a layer, or layers, of material to a surface to obtain desired dimensions or properties, as opposed to making a joint.

**Rounded indication:** indication of circular or elliptical shape with a length equal to or less than three times its width.

3.) Add the following to the “FABRICATION” section of Appendix W (W14.0):

**PROPOSED:**

*W14.9 Preheat and Interpass Temperature*

*Base metal shall be preheated, if required, to a temperature not less than the minimum value listed on the WPS (see Table W8 for WPS essential variable limitations). The preheat and all subsequent minimum interpass temperatures shall be maintained during the welding operation for a distance at least equal to the thickness of the thickest welded part, but not less than 3 in. in all directions from the point of welding. Minimum interpass temperature requirements shall be considered equal to the preheat requirements, unless otherwise indicated on the WPS. The preheat and interpass temperature shall be checked just prior to initiating the arc for each pass.*

4.) Figure W14

**PRESENT:**

Visual examination results \_\_\_\_\_

**Proposed:**

Visual examination results (See W15.3, 15.4, 15.5 and 15.9) Acceptable YES or NO

\_\_\_\_\_

**Justification:** Clarify the requirements of a visual examination.

5.) W6.2, Table W13 and Figure W3

**PRESENT:**

**6.2 All-Weld-Metal Tension Specimens**

**6.2.1** The all-weld-metal tension specimen required for welding procedure qualification shall be taken entirely from weld metal (at least the reduced section) and shall conform to the dimensional requirements of Fig. W3.

**6.2.2** This specimen is not required if the test plate thickness is less than 5/8 in. (15.9 mm).

**Table W13 Procedure Qualification Tests Required**

Thickness (t) of Test Plate As-Welded, in. (mm)	Range of Thickness of Material Qualified by Test Plate, a/ in. (mm)		Type and Number of Test Required b/						
			Tension		Guided Bend Tests				
	Min. c /	Max. /	Fig. W2	Fig. W3	Side-Bend Fig. W5C d/e/	Face-Bend Fig. W5A e/	Root-Bend Fig. W5B e/	Fillet Tee-Joint Fig. W7B f/	
1/16 (1.59) to 3/8 (9.5) incl.	1/16g / (1.59 g/)	2t	2				2	2	
Over 3/8 (9.5) but less than 3/4 (19.0)	3/16 (4.76)	2th/	2	1i/			2	2	
or Over 3/8 (9.5) but less than 3/4 (19.0)	3/16 (4.76)	2th/	2	1i/	4				
3/4 (19.0) and over	3/16 (4.76)	2th/	2	1	4				
Fillet (Fig. W7B)	All thicknesses								5

a/ All groove welds qualify fillet welds on any thickness of base metal. b/

b/ When impact or corrosion tests are required by the tank specification, they shall be included as a requirement of the procedure qualification and taken at test plate locations as shown in Figs. W21A and W21B. c/

c/ Unless restricted by Table W9 and paragraph 16.2.2.6 d/

d/ For aluminum alloy 6061, use Fig. W5D. e/

e/ Longitudinal face-bend and longitudinal root-bend tests (Fig. W4B) may be used in lieu of side-, face-, and root-bend tests only for testing material combinations differing markedly in physical bending properties between the two base materials or between the weld metal and the base materials.

f/ Required only for ferritic steels having their mechanical properties enhanced by quenching and tempering. g/

g/ 0.5t for nonferrous materials, but not less than 1/16 in. (1.59 mm). h/

h/ For gas metal-arc welding, submerged arc welding, and gas tungsten arc welding, the thickness limitations for production welding based on a test plate thickness, t, shall be as follows:

1. For single-pass welding, with no backing strip or against a metal or ceramic backing, the maximum thickness welded in production shall not exceed the thickness of the test plate.



2. If the test plate is welded by a procedure involving one pass from each side, the maximum thickness that may be welded in production shall be  $2t$ , where  $2t$  shall not exceed 2 in. (50.8 mm). If sections heavier than 2 in. (50.8 mm) are to be welded in production, a separate test plate shall be prepared, of a thickness not less than the thickness to be used in production.

i/ Not required for test plate thickness less than 5/8 in. (15.9 mm).

Figure W3 All weld-metal tension specimen

**PROPOSED:**

**6.2. VACANT**

Table W13 Procedure Qualification Tests Required

Thickness (t) of Test Plate As-Welded, in. (mm)	Range of Thickness of Material Qualified by Test Plate, a/ in. (mm)		Type and Number of Test Required b/					
			Tension		Guided Bend Tests			
	Min. c	Max.	Fig. W2	Fig. W3	Side-Bend Fig. W5C d/e/	Face-Bend Fig. W5A e/	Root-Bend Fig. W5B e/	Fillet Tee-Joint Fig. W7B f/
1/16 (1.59) to 3/8 (9.5) incl.	1/16g / (1.59 g/)	2t	2			2	2	
Over 3/8 (9.5) but less than 3/4 (19.0)	3/16 (4.76)	2th/	2	<del>1i/</del>		2	2	
or Over 3/8 (9.5) but less than 3/4 (19.0)	3/16 (4.76)	2th/	2	<del>1i/</del>	4			
3/4 (19.0) and over	3/16 (4.76)	2th/	2	<del>1</del>	4			
Fillet (Fig. W7B)	All thicknesses							5

a/ All groove welds qualify fillet welds on any thickness of base metal. b/

b/ When impact or corrosion tests are required by the tank specification, they shall be included as a requirement of the procedure qualification and taken at test plate locations as shown in Figs. W21A and W21B. c/

c/ Unless restricted by Table W9 and paragraph 16.2.2.6 d/

d/ For aluminum alloy 6061, use Fig. W5D. e/

- e/ Longitudinal face-bend and longitudinal root-bend tests (Fig. W4B) may be used in lieu of side-, face-, and root-bend tests only for testing material combinations differing markedly in physical bending properties between the two base materials or between the weld metal and the base materials.
- f/ Required only for ferritic steels having their mechanical properties enhanced by quenching and tempering. g/
- g/ 0.5t for nonferrous materials, but not less than 1/16 in. (1.59 mm). h/
- h/ For gas metal-arc welding, submerged arc welding, and gas tungsten arc welding, the thickness limitations for production welding based on a test plate thickness, t, shall be as follows:
3. For single-pass welding, with no backing strip or against a metal or ceramic backing, the maximum thickness welded in production shall not exceed the thickness of the test plate.
  4. If the test plate is welded by a procedure involving one pass from each side, the maximum thickness that may be welded in production shall be 2t, where 2t shall not exceed 2 in. (50.8 mm). If sections heavier than 2 in. (50.8 mm) are to be welded in production, a separate test plate shall be prepared, of a thickness not less than the thickness to be used in production.

~~i/ Not required for test plate thickness less than 5/8 in. (15.9 mm).~~

### **Figure W3. VACANT**

**Justification: All weld-metal tension tests are not relevant to welding procedure qualification.**

### **6.) PRESENT:**

#### **W13.7 Weld Buildup**

**Figure W24 Detail for microhardness sections for weld overlay procedure qualification**

**R11.5 Repair by Weld Buildup, Figure R12**

### **PROPOSED:**

#### **W13.7 VACANT**

**Figures W23 and W24 VACANT**

### **R11.5 and Figure R12 VACANT**

**Justification: Weld buildup using the temper bead technique is no longer allowed. SEE CORRESPONDING CHANGES TO TABLE R3 and R25.1 Welding Purpose Codes (Separate Attachments)**

**(7) Paragraphs W11.2.2 through 11.4.2.1, Tables W4 and W5, and Figures W17, W18, W19 and W20 / Replace “porosity” with “rounded indications” as follows:**

## 11.2.2 Acceptance Standards for Radiographed Welds

11.2.2.1 Reference radiographs of ASTM E390, “Reference Radiographs for Steel Fusion Welds,” are accepted as a guide to types and degrees of discontinuities detectable by radiographs of steel welds.

11.2.2.2 Welds whose radiotapes show any of the following types of imperfections shall be unacceptable:

- An elongated slag inclusion that has a length greater than 1/4 in. (6.35 mm) for T up to 3/4 in. (19.0 mm), or 1/3 T for T from 3/4 in. to 2 1/4 in. (19.0 mm to 57.2 mm) (T is thickness of the thinner plate of the joint)
- A group of slag inclusions in line that have an aggregate length greater than T in a weld length of 12T, except when the distance between successive inclusions exceeds 6L, where L is the length of the longest inclusion in the group
- Any type of crack or zone of incomplete fusion or incomplete penetration
- **Porosity Rounded indications** in excess of that specified as acceptable in paragraphs 11.2.3 and 11.2.4 below.
- ~~Other round inclusions shall be judged on the same basis as porosity~~

### 11.2.3 **Porosity Rounded Indications**

11.2.3.1 Images of a general circular or oval shape shall be interpreted as **porosity rounded indications** for the purpose of this standard. For radiography, the image will appear dark. For fluoroscopy, the image will appear light.

11.2.3.2 Permissible **porosity rounded** indications for weld thicknesses intermediate to those illustrated shall be evaluated by comparison with the **rounded indication porosity** chart for the next thinner material or by calculation as shown in Table W4.

11.2.3.3 The total area of the **rounded indications porosity** as determined from the radiograph shall not exceed  $0.060T \text{ in.}^2$  ( $38.7T \text{ mm}^2$ ) in any 6-in. (152-mm) length of weld, where T is the thickness of the weld.

If the weld is less than 6 in. (152 mm) long, the total area of **porosity rounded indications** will be reduced in proportion.

11.2.3.4 In any 1-in. (25.4-mm) length of weld or 2T, whichever is smaller, **porosity rounded indications** may be clustered to a concentration four times that permitted by  $0.060T \text{ in.}^2$  ( $38.7T \text{ mm}^2$ ). Such clustered **porosity rounded indications** shall be included in the **porosity rounded indications** in any 6-in. (152-mm) length of weld that includes the cluster.

11.2.3.5 Aligned **porosity rounded indications** shall be acceptable provided the summation of the diameters of the **Indications pores** is no more than T in a length 12T or 6 in. (152 mm), whichever is less, provided each **indication pore** is separated by a distance at least six times the diameter of the largest adjacent pore. Aligned **porosity rounded indications** shall be counted in the total area of permissible indications in any 6-in. (152-mm) length of weld.

11.2.3.6 The maximum **pore-indication** dimension shall be 0.2T or 1/8 in. (3.18 mm), whichever is smaller, except that an isolated **pore-indication** separated from an adjacent **pore indication** by 1 in. (25.4 mm) or more may be 0.3T or 1/4 in. (6.35 mm), whichever is less.

Table W4. Maximum permissible **porosity rounded** indications in radiotapes per 6-in. length of weld—conventional units

Weld Thickness, in.	Total Area of Permitted Indications Porosity, in.2	Large Pore Indication Size			Medium Pore Indication Size			Fine Pore Indication Size		
		Approx. Fraction, in.	Decimal Value, in. a/	No.	Approx. Fraction, in.	Decimal Value, in. a/	No.	Approx. Fraction, in.	Decimal Value, in. a/	No.
1/4	0.015	—	—	—	3/128	0.025	31	1/64	0.0138	100
1/2	0.030	3/32	0.10	4	1/32	0.031	40	3/128	0.0195	101
3/4	0.045	1/8	0.125	4	1/32	0.034	50	3/128	0.024	99
1	0.060	1/8	0.125	5	5/128	0.039	50	1/32	0.0275	101
1 1/2	0.090	1/8	0.125	7	3/64	0.048	50	1/32	0.034	99
2	0.120	1/8	0.125	10	7/128	0.055	51	5/128	0.039	100

a/ These values used for calculating total area of permitted **porosity rounded indications**.

Table W5. Maximum permissible **porosity rounded** indications in radiotapes per 15.2-mm length of weld—SI units

Weld Thickness, mm	Total Area of Permitted Indications Porosity, mm2	Large Pore Indication Size		Medium Pore Indication Size		Fine Pore Indication Size	
		Decimal Value, mm a/	No.	Decimal Value, mm a/	No.	Decimal Value, mm a/	No.
6.35	9.68	—	—	0.64	31	0.351	100
12.7	19.4	2.54	4	0.79	40	0.495	101
19.0	29.0	3.18	4	0.86	50	0.610	99
25.4	38.7	3.18	5	0.99	50	0.699	101
38.1	58.1	3.18	7	1.22	50	0.865	99
50.8	77.4	3.18	10	1.40	51	0.991	101

a/ These values used for calculating total area of permitted **porosity rounded indications**.

#### 11.2.4 Porosity Rounded Indication Charts

11.2.4.1 The **porosity rounded indication** charts, Figs. W17 through W20, illustrate various types of assorted and uniform, randomly dispersed **porosity** indications. The chart for each thickness represents the maximum acceptable **rounded indications porosity**. The charts represent full-scale 6-in. radiographs and shall not be enlarged or reduced. The **rounded indications porosity**-distributions shown are not necessarily the patterns that may appear on

the radiograph, but are typical of the number and size of indications permitted. When **porosity** indications differ significantly from the **porosity** charts, the actual numbers and sizes of the **rounded indications pores** may be measured and the total area of **rounded indications porosity** calculated.

~~11.2.4.2 Porosity charts are identical with the 1974 edition of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code, Appendix 4, published by the American Society of Mechanical Engineers, 345 East 47th Street, New York, New York, 10017, and are reproduced by  
Permission-VACANT~~

**Figures W17 through W 20: Change title from “Porosity Charts” to “Rounded Indication Charts”. Also, replace the word “pores” in each chart with the word “indications”.**

**Justification: Porosity is not always a rounded indication. The term “rounded indication” is also standard terminology in AWS and ASME specifications.**

#### (8.) W9.1.1

##### PRESENT:

###### 9.1.1 Material and Number Required

Test plates used to prepare specimens shall be provided for each tank and shall be from one of the heats that provided plates for the tank. Where welding is involved, the plates shall be welded using the same joint detail, WPS and electrodes as required for the tank. Unless otherwise specified, at least one set of three specimens shall be taken across the weld with notch in the heat affected zone and one set of three with notch in the weld metal. See Fig. W10.

##### PROPOSED:

###### W9.1.1 Material and Number Required

Test plates used to prepare specimens shall be provided for each tank and shall be from one of the heats that provided plates for the tank. Where welding is involved, the plates shall be welded using the same joint detail, WPS and electrodes as required for the tank. Unless otherwise specified, at least one set of three specimens shall be taken across the weld with notch in the heat affected zone and one set of three with notch in the weld metal. See Fig. W10. *When two plates of different materials are involved, an additional set of three specimens shall be taken so that there is one set with the notch in each heat affected zone.*

#### 9.) W13.1.4

##### PRESENT:

13.1.4 Unless otherwise specified for special commodities (see 49 CFR 179.102), WPS used in welding pressure car head and shell joints (including nozzle-to-shell welds) shall be qualified with PQRs that have been Charpy impact tested at or below  $-30^{\circ}\text{F}$  ( $-34^{\circ}\text{C}$ ) to meet the requirements of Table W2. Table W9, Supplementary Essential Variables, applies to procedure development.

Production tests do not require impact testing, unless otherwise specified. Austenitic stainless steel tanks made in accord with paragraph 17.9.2 below without postweld heat treatment, using type 304L or 316L filler metals meeting AWS specifications, are exempt from the requirements of this paragraph. Weld procedures for special commodities shall match the base metal requirements listed in 49 CFR 179.102.

**PROPOSED:**

**W13.1.4** Unless otherwise specified for special commodities (see 49 CFR 179.102), WPS used in welding pressure car head and shell joints (including nozzle-to-shell welds) shall be qualified with PQRs that have been Charpy impact tested at or below  $-30^{\circ}\text{F}$  ( $-34^{\circ}\text{C}$ ) to meet the requirements of Table W2. *In addition to the requirements specified in Table W8, Essential Variables,* Table W9, Supplementary Essential Variables, applies to procedure development. Production tests do not require impact testing, unless otherwise specified. Austenitic stainless steel tanks made in accord with paragraph 17.9.2 below without postweld heat treatment, using type 304L or 316L filler metals meeting AWS specifications, are exempt from the requirements of this paragraph. Weld procedures for special commodities shall match the base metal requirements listed in 49 CFR 179.102.

**Justification:** Clarify essential and supplementary essential variable requirements listed in Tables W8 and W9.

**10.) W16.2.2.5**

**PRESENT:**

**16.2.2.5** Welding procedure qualifications shall be made using a base metal of the same type or grade as the base metal to be used in production welding. When joints are to be made between two different base metals, a procedure qualification shall be made for the applicable combination of base metals, even though procedure qualification tests have been made for each of the two base metals welded to itself. If, however, the procedure specification for welding the combination of base metals specifies the same essential variables, including electrode or filler metal, as both specifications for welding each base metal to itself, such that base metals is the only change, it shall not be necessary to make impact tests to qualify the two together. In addition, when two different base metals are qualified using a single test coupon, that coupon qualifies the welding of these two to themselves, as well as to each other, using the variables qualified. In all cases, joint tension test specimens of the PQRs must meet the requirements of paragraph 6.3.2 of this appendix.

**PROPOSED:**

**16.2.2.5** Welding procedure qualifications shall be made using one of the following:

- (a) the same base metal (including type and grade) to be used in production welding**
- (b) for ferrous materials, a base metal listed in the same P-Number Group Number as the base metal to be used in production welding. See Appendix M, Table M10, for tank plate base metals and ASME Section IX for other base metals.**
- (c) for nonferrous materials, a base metal listed with the same P-Number UNS Number in ASME IX, Table QW/QB-422 as the base metal to be used in production welding. In all cases, joint tension test specimens of the PQRs must meet the requirements of paragraph 6.3.2 of this appendix.**

**Justification:** Clarification of supplementary essential variables.

**11.) W13.1.2**

**PRESENT:**

**13.1.2** Except for steels having their mechanical properties enhanced by quenching and

tempering, procedure qualification tests for butt and fillet welds shall be made using butt-welded test plates (see Figs. W4A, W15, W21A, and W21B). Procedures used for deposits of metal applied to the surface (except those covered by paragraph 13.7 below) shall be qualified by using butt-welded test plates. Satisfactory qualification test results on specimens prepared from the butt-welded test plates shall qualify a welding procedure for use with both butt and fillet welds, including nozzles and other circular attachments to the shell, within the range of essential variables of its WPS. (See Fig. W12.)

**PROPOSED:**

W13.1.2 Except for steels having their mechanical properties enhanced by quenching and tempering, procedure qualification tests for butt and fillet welds shall be made using butt-welded test plates (see Figs. W4A, W15, W21A, and W21B). Procedures used for deposits of metal applied to the surface of any thickness shall be qualified by using butt-welded test plates of at least 7/16" thick. Satisfactory qualification test results on specimens prepared from the butt-welded test plates shall qualify a welding procedure for use with both butt and fillet welds, including nozzles and other circular attachments to the shell, within the range of essential variables of its WPS.

**Justification: Remove thickness restrictions for weld buildup qualification.**

12.) Figure W4 A (text reference) is actually Figure W4 and Figure W4B (text reference) is actually Figure W4.1. This pattern seems to hold true throughout the document...looks like the protocol for figure identification was not linked with the text references to the figures when the document was revised. **Correct /editorial issue.**

12.) R13.2.2

**PRESENT:**

13.2.2 The inserted material must be of a thickness equal to or not more than 1/8 in. (3.14 mm) greater than the original material. See Appendix E when the inserted material is thicker than the original material. Inserted material must comply with the material specification for the original tank or must have comparable physical and chemical properties and be listed in Appendix M, Table M10.1.

**PROPOSED:**

13.2.2 The inserted material must be of a thickness equal to or not more than 1/8" in. greater than the original materials. See Appendix E when the inserted material is thicker than the original material. Inserted material must comply with the material specifications for the original tank or must have comparable **chemical composition and physical properties equal to or greater than as** the original material. Materials used for inserted material must be listed in Appendix M, and in the relevant table for the material type.

**Justification: Clarify material requirements for tank inserts.**

**PRESENT:**

**R16.6 Welding Stud Attachments**

If welding studs are applied by the stud welding process, the tank must be postweld heat treated.

Studs may be applied by fillet welding per the requirements of paragraph 25.0.

**PROPOSED:**

**R16.6** ~~If welding studs are applied by the stud welding process, carbon steel and high alloy tank car tanks must be post weld heat treated. Tank car tanks made from P-8 (Types 304L, 316L) P-22, or P-25 materials do not need to be post weld heat treated. Studs may be applied by fillet welding per requirements of paragraph 25.0.~~ **Stud welding on carbon steel tank car tanks shall be done in accordance with Table R3.0. Stud welding on tank car tanks made from P-8 (types 304L, 316L), P-22, or P-25 materials shall be done in accordance with Table R3.1. Welding Purpose Code F applies for both tables.**

**Justification: Refer to proper tables for welding, PWHT and NDE requirements.**



# DOCKET T80.2.4 PROPOSALS / OCTOBER 2012

## **PRESENT:**

### **19.2 Welded Joints to be Inspected (Radiograph or Ultrasonic)**

**19.2.1** The entire length of the following double-welded butt joints shall be inspected:

**19.2.1.1** All longitudinal and circumferential joints of a tank, except circumferential joints in a multi-unit tank car tank need not be radiographed or ultrasonically inspected.

**19.2.1.2** The joint between the shell and certain types of fittings used to provide a reinforced opening. See Appendix E, Fig. E20.2.

**19.2.2** The entire length of a single-welded butt joint with backup shall be inspected when it is used, in combination with less than a full fillet weld, to attach the interior heads of compartment tanks. See Appendix E.

**19.2.3** Vacant

## **PROPOSED:**

### **19.2 Welded Joints to be Inspected (Radiograph or Ultrasonic)**

**19.2.1** The entire length of the following double-welded butt joints shall be inspected:

**19.2.1.1** All longitudinal and circumferential joints of a tank, except circumferential joints in a multi-unit tank car tank need not be radiographed or ultrasonically inspected.

**19.2.1.2** The joint between the shell and certain types of fittings used to provide a reinforced opening. See Appendix E, Fig. E20.2.

**19.2.2** The entire length of a single-welded butt joint with backup shall be inspected when it is used, in combination with less than a full fillet weld, to attach the interior heads of compartment tanks. See Appendix E.

#### **19.2.3 Exceptions**

**19.2.3.1 The following double-welded groove welds do not require radiographic inspection or ultrasonic inspection:**

**Nozzle seam welds**

**Nozzle-to-flange welds**

**Nozzle-to-shell welds of non-pressure tanks (other than reinforced openings per Fig. E20.2)**

#### **19.2.4 Nozzle-to-Shell Welds of Pressure Tanks (other than reinforced openings per Fig. E20.2)**

**19.2.4.1 A six-inch minimum length of each nozzle to shell weld shall be inspected using radiography or ultrasonic examination. If the inspected length of weld meets the specified acceptance criteria of W11.0 (for the NDT method used), no further volumetric examination is required. If the six inch area fails to meet the specified acceptance criteria of W11.0, then 100% of the weld shall be volumetrically examined by the same NDT method used in the initial examination and repaired as required.**

**Justification: Provide a means for volumetric examination of pressure tank nozzle-to-shell weldments along with a list of exceptions. This proposal was developed to supplement the change to definition of tank car tank (Ref. Docket T90.25).**

**PRESENT:**

**11.5.2 Ultrasonic Acceptance Criteria**

Discontinuities that produce a response greater than 20% of the reference level shall be investigated to the extent that the operator can determine the shape, identity, and location of all such discontinuities

and evaluate them in terms of the acceptance standards given below:

**11.5.2.1** Indications characterized as cracks, lack of fusion, or incomplete penetration are unacceptable regardless of length.

**11.5.2.2** Any relevant indication that intersects the surface of the component or weld shall be rejectable, unless the indication is determined to be caused by a visually (VT) acceptable condition.

**11.5.2.3** Other discontinuities are unacceptable if the indications exceed the reference level and have lengths that exceed the following:

**11.5.2.3.1** 1/4 in. (linear length).

**PROPOSED:**

**11.5.2 Ultrasonic Acceptance Criteria**

Discontinuities that produce a response greater than 20% of the reference level shall be investigated to the extent that the operator can determine the shape, identity, and location of all such discontinuities

and evaluate them in terms of the acceptance standards given below:

**11.5.2.1** Indications characterized as cracks, lack of fusion, or incomplete penetration are unacceptable regardless of length.

**11.5.2.2** Any relevant indication that intersects the surface of the component or weld shall be rejectable, unless the indication is determined to be caused by a visually (VT) acceptable condition.

**11.5.2.3** Other discontinuities are unacceptable if the indications exceed the reference level and have lengths that exceed the following:

**11.5.2.3.1** **1/4 in. (6.35 mm) for T up to 3/4 in. (19.0 mm), or 1/3 T for T from 3/4 in. to 2 1/4 in. (19.0 mm to 57.2 mm) (T is thickness of the thinner plate of the joint)**

**Justification: Provide for a change in acceptance criteria with increased thickness. This is consistent with ASME Mandatory Appendix 12 Ultrasonic Examination of Welds.**

Welding Task Force Proposals (continued)

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At the January 2012 meeting, it was reported that the current proposal is pending further clarification by the TF. The tank car committee requested that a summary of changes and reasoning behind the changes be provided by the TF to the members of the TCC prior to the April 2012 TCC meeting.

At the April 2012 meeting, M. Untermeyer provided an overview of the entire proposal which was made available within the docket. Mike stated that B. Seibold from BNSF sits on American Welding Society (AWS) D15.1 committee. The AWS D15.1 committee addresses railroad welding of locomotives and passenger cars where Appendix W of M-1002 does not. Appendix W of M-1002 addresses jacket welds and tank car welds where AWS D15.1 does not. Mike stated that the next version of AWS D15.1 is expected to be published this year. It was mentioned that it would be great that if in the future it was possible to move solely to AWS D15.1 or Appendix W of M-1002 for all tank car welding requirements. A motion was made, seconded, and passed to move the proposal as written to the executive TCC meeting.

The following individuals will be added to the TF: Sarah Hopper, Ray Morgan, and Steve McCullough.

At the July 2012 meeting, a CPC was published for comments on the TF proposals. Comments were such that the revision will have to be resubmitted by CPC for further comments. FRA wants an opportunity to review the proposal one more time. FRA will talk to the TF chairman to let him know about the issues which further review is requested. The table format was considered an improvement to the document.

At the October 2012 meeting, M. Untermeyer reported on the proposals provided in the background. 19.2.4.1 was specifically discussed as it ties into the T90.25 TF proposal.

Justification for proposal: Provide a means for volumetric examination of pressure tank nozzle-to-shell weldments along with a list of exceptions. This proposal was developed to supplement the change to definition of tank car tank (Ref. Docket T90.25) which would include nozzles welded to the tank as part of the tank.

Proposal made in April needs to be removed based on considerations of attachments to nozzles. R25.0 paragraph specifically removed. Remove proposals from docket (page 31-33).

The TF agrees that the welding purpose codes A and B shown in the table suffice; however FRA has expressed some reservations. The FRA would like the weld removed, then inspected, followed by repair and then re-inspected when completed with repair.

The TF is looking into the applicability of an insert of TC-128 material being used in a tank car constructed of A516 steel and the applicability of an insert of A516 steel being used in a tank car constructed of TC-128.

M. Untermeyer stated that the 2012 version of AWS D15.1 is not available.

## Welding Task Force Proposals (continued)

Motion made, seconded, and passed to move proposals on page 20-30 and 34-35 to the executive TCC for consideration.

FRA asked about a review of requirements in Appendix R and Appendix W addressing the inspection of welds of inserts into the tank and welds which are ground flush. TCC agreed to have the T80.2.4 TF address this item.

At the January 2013 meeting, K. Dorsey discussed the proposal provided in the background.

A motion was made, seconded, and passed on the proposal as provided in the background. AAR will draft a CPC for comment.

Comment on page 19. D15.1 is now available instead of not available.

**AAR received the following proposals via email on 3/21/13 from M. Untermeyer**

**DOCKET T80.2.4 TASK FORCE PROPOSALS (Appendix W and Appendix R)  
APRIL 2013**

**PRESENT:**

**R11.1 Random Pits**

**11.1.1 Random pits may be repaired by chipping or grinding to sound metal.**

**11.1.2 If the sound metal is less than the minimum allowable thickness, restoration of the affected areas to at least the minimum allowable thickness by weld buildup or insert is required. See paragraph 25.0.**

**11.2 Grouped Pits and General Corrosion**

**11.2.1 Corroded areas or grouped pits whose total area of repair is equal to or less than 2 ft<sup>2</sup> may**

**be repaired by chipping or grinding to sound metal. If the sound metal is less than the minimum**

**allowable thickness, restoration of the affected areas to at least the minimum allowable thickness**

**by weld buildup or insert is required. See paragraph 25.0.**

**PROPOSED:**

**R11.1 VACANT**

**11.1.1 VACANT**

**11.1.2 VACANT**

**11.2 VACANT**

**11.2.1 VACANT**

**Justification: Repair of defective areas is now covered in R25.0.**

**PRESENT:**

**R11.6 Repair of Pressure Car Manway Gasket Grooves**

**Repair of a gasket groove on a pressure car manway nozzle is to be made by removing corroded or damaged material, applying weld metal, machining the flange face, and recutting**

the groove. Welding must be performed by an AAR-qualified welder in a certified facility. Postweld heat treatment is not required. A leakage pressure test per 49 CFR 180.509(j) is required to ensure the integrity of the manway securement.

**PROPOSED:**

**R11.6 Repair of Pressure Car Manway Gasket Grooves**

Repair of a gasket groove on a pressure car manway nozzle is to be made by removing corroded or damaged material, applying weld metal, machining the flange face and recutting the groove. ~~Welding must be performed by an AAR-qualified welder in a certified facility. Postweld heat treatment is not required.~~ See Paragraph R25.0 for welding and NDE requirements.

**Justification:** Repair of defective areas is now covered in R25.0.

**PRESENT:**

**W14.8 Arc Strikes**

Cracks or blemishes (visible marks) caused by arc strikes shall be removed. The removal of any cracks shall be confirmed by liquid penetrant or magnetic particle inspection; reference Appendix T, paragraph 4.0 or 5.0, respectively.

**PROPOSED:**

**W14.8 Arc Strikes**

**Arc strikes shall be removed. Visible defects shall be addressed per Appendix R.**

**Justification:** Some interpret the present wording to mean that PT or MT is required for every arc strike area. AWS and ASME specifications do not require PT or MT for arc strike areas.

Table W7 – replace “thickness to be welded” with “unlimited”.

**Justification:** The term "unlimited" is more clearly understood and consistent with AWS standard practice.

**TACK WELDER PERFORMANCE QUALIFICATION**

**PROPOSED:**

**W2.0 Definitions**

**Tack welder – One who performs manual or semiautomatic welding to produce tack welds.**

**Tack weld – A weld made to hold the parts of a weldment in proper alignment until the final welds are made. Tack welds shall be incorporated in the final weld or removed.**

**Temporary welds – A weld made to attach a piece or pieces to a weldment for temporary use in handling, fitting, or working on the weldment. Temporary welds shall be removed.**

**PRESENT:**

W14.3.2 Bars, jacks, clamps, or other appropriate devices, including tack welds, may be used to hold in alignment the edges to be welded. Temporary tack welds shall be removed.

**PROPOSED:**

W14.3.2 Bars, jacks, clamps, or other appropriate devices, including tack welds, may be used to hold in alignment the edges to be welded. **Tack welds shall be incorporated during final welding or removed.** Temporary welds shall be removed. **Temporary and/or tack welds shall be deposited in accordance with a qualified welding procedure.**

**PROPOSED:**

**W12.9 Qualification of Tack Welders**

**12.9.1 Qualification of tack welders shall be in accordance with AWS D15.1, latest edition.**

**12.9.2 A weld procedure specification (WPS) qualified in accordance with Appendix W must be followed for the tack welder qualification test.**

**Justification: AAR Appendix W does not currently address performance qualification of tack welders.**

**Appendix R**

**25.0 WELDING TO TANK CAR TANKS ~~AFTER UNIT PWHT~~**

**25.1 Welding to Carbon Steel Tank Car Tanks After Unit PWHT**

When additional welding is found necessary following unit postweld heat treatment, the following applies for carbon steel tank car tanks as categorized ~~fabricated from materials identified in Table R3.0.~~ See R5.0 for AHF Tank Car Tank Repair Requirements. (Note: hydrostatic testing may be used in addition to NDT methods but not in place of NDT; see paragraph 21.0.)

**Table R3.0 Processing Additional Welding to Carbon Steel Tank Car Tanks**

<b>Car Category</b>	<b>Welding Purpose Code</b>	<b>PT or MT after removal of imperfection and prior to welding</b>	<b>PT or MT after welding</b>	<b>Radio graph/ Ultrason-ica/,b/</b>	<b>PWHT</b>
Pressure cars	A	No	No	Yes	Yes
	B	Yes <sup>g/</sup>	Yes <sup>c/</sup>	No	Yes
	C	No	No	No	No
	D	No	No	No	Yes
	E	No	No	No	Yes
	F	No	No	No	Yes
	<del>G</del>	<del>No</del>	<del>Yes<sup>h/</sup></del>	<del>No</del>	<del>Yes</del>
	H	No	No	Yes <sup>i/</sup>	Yes
	I	No	No	Yes	Yes
	J	Yes	No	No	Yes
Nonpressure cars, or the portions thereof built from	A	No	No	Yes <sup>i/</sup>	Yes <sup>f/</sup>
	B	Yes <sup>g/</sup>	Yes <sup>c/</sup>	No	No

carbon steel materials other than TC-128	C	No	No	No	No
	D	No	No	No	No
	E	No	No	No	Yes <sup>f/</sup>
	F	No	No	No	Yes <sup>d/,i/,f/</sup>
	G	No	Yes	No	Yes <sup>f/</sup>
	H	No	No	No	Yes <sup>f/</sup>
	I	No	No	Yes <sup>i/</sup>	Yes <sup>i/</sup>
	J	Yes	No	No	Yes <sup>d/,f/</sup>

Nonpressure cars , or the portions thereof built from TC-128	A	No	No	Yes <sup>i/</sup>	Yes <sup>f/</sup>
	B	Yes <sup>g/</sup>	Yes <sup>c/</sup>	No	Yes <sup>f/</sup>
	C	No	No	No	No
	D	No	No	No	Yes <sup>f/</sup>
	E	No	No	No	Yes <sup>f/</sup>
	F	No	No	No	Yes <sup>f/</sup>
	G	No	Yes <sup>h/</sup>	No	Yes <sup>f/</sup>
	H	No	No	No	Yes <sup>f/</sup>
	I	No	No	Yes <sup>i/</sup>	Yes <sup>e/</sup>
	J	Yes	No	No	Yes <sup>f/</sup>

<sup>a/</sup> If tank material is type 430A, repair welds and intersections of all longitudinal and circumferential double-welded butt joints in the tank must be radiographic or ultrasonic tested after postweld heat treatment.

<sup>b/</sup> When uniform inserts, tank sections, or heads are being welded on a series of tanks of the same material using the same welding procedures and practices as in new construction, the inspection must comply with Appendix W, paragraph 19.0.

<sup>c/</sup> If repair is within 2 ft (610 mm) of bottom longitudinal centerline

<sup>d/</sup> If fillet weld size exceeds 5/16 in. (8 mm) or length exceeds 24 in. (610 mm)

<sup>e/</sup> Not required for tank car tanks steel stamped to AAR specifications unless the **steel stamped AAR** tank material is TC-128, then Note f applies.

<sup>f/</sup> A welding procedure with a minimum 300 °F (149 °C) preheat **and interpass temperature** may be used in lieu of postweld heat treatment.

<sup>g/</sup> **PT or MT required only if repair is a crack.**

<sup>h/</sup> To be performed after PWHT is complete.

<sup>i/</sup> **Not required for tank car tanks steel stamped to AAR specifications**

<sup>j/</sup> **See W19.0 for inspection requirements.**

### 25.1.1 Welding to Aluminum and Stainless Steel Tank Car Tanks After Hydrostatic Testing

When additional welding is found necessary following hydrostatic testing, the following applies for tank car tanks fabricated from materials listed in Tables M10.2 and M10.3.

Car Category	Welding Purpose Code	PT after removal of imperfection and prior to welding	PT after welding	Radiograph or Ultrasonic <sup>a/</sup>
All cars	A	No	No	Yes
	B	Yes <sup>b/</sup>	Yes	No
	C	No	No	No
	D	No	No	No
	E	No	No	No

	F	No	No	No
	<del>G</del>	<del>No</del>	<del>Yes</del>	<del>No</del>
	H	No	No	No
	I	No	No	Yes
	J	Yes	No	No

**Table R3.1 Processing Additional Welding to Aluminum and Stainless Steel Tank Car Tanks**

<sup>a/</sup> When uniform inserts, tank sections, or heads are being welded on a series of tanks of the same material using the same welding procedures and practices as in new construction, the inspection must comply with Appendix W, paragraph 19.0.

<sup>b/</sup> PT required only if repair is a crack.

### 25.1.2 Welding Purpose Code

Code	Description
A	Repair defective areas (after preparation for welding) <del>equal to or less than 3/8 in. (10 mm) wide and</del> greater than 3/16 in. (5 mm) deep of any width and length. <del>Multiple repairs must be separated by 2 in. (51 mm) minimum of unwelded plate.</del>
B	Repair defective areas (after preparation for welding) <del>equal to or less than 3/8 in. (10 mm) wide, and</del> equal to or less than 3/16 in. (5 mm) deep of any width and length. <del>Multiple repairs must be separated by 2 in. (51 mm) minimum of unwelded plate.</del>
C	<del>Repair defective areas (after preparation for welding) greater than 3/8 in. (10 mm) wide and greater than 3/16 in. (5 mm) deep, of any length.</del> Welding to nozzles and flanges (When welding to the tank shell or head is involved, see Welding Purpose Code F and/or H.)
D	Repair exterior coil fillet weld with weld length 6 in. (152 mm) or less.
E	Repair exterior coil fillet weld with weld length over 6 in. (152 mm).
F	Add or replace attachments to tank head or tank shell by fillet welding.
<del>G</del>	<del>Weld surfacing or weld build-up or weld overlay. For purposes of this specification, repair or restoration of areas (after preparation for welding) greater than 3/8 in. (10 mm) wide and equal to or less than 3/16 in. (5 mm) deep of any length shall be considered weld surfacing or weld buildup.</del>
H	Add or replace attachments to tank head or tank shell by groove welding.
I	<del>Butt-Groove welded inserts</del> <del>plates and sumps.</del>
J	Repair of attachment fillet welds

### 25.1.3 Local Postweld Heat Treatment

Local postweld heat treatment may be used, provided that the heated area includes at least six times the tank or head plate thickness on each side of the weld. The temperature distribution must be controlled as follows:

**25.1.3.1** Above 800 °F (427 °C), the rate of heating shall be no more than 400 °F per hour divided by the tank thickness in inches, but in no case more than 400 °F (204 °C) per hour.

**25.1.3.2** During the heating and cooling periods, there shall be no greater variation in temperature than 250 °F (121 °C) throughout the heated area of the tank, nor shall any portion exceed 1250 °F (677 °C).

**25.1.3.3** During the holding period, there shall be no greater difference than ±50 °F (±10 °C) throughout the heated area of the tank. During the holding period, the minimum temperature throughout the heated area shall be not less than 1100 °F (593 °C) or greater than 1250 °F (677 °C).

**25.1.3.4** Above 800 °F (427 °C), cooling shall be done at a rate not greater than 500 °F per hour divided by the tank thickness in inches (~~7055 °C divided by tank thickness in millimeters~~), but in no case more than 500 °F (260 °C) per hour. Below 800 °F (427 °C), the tank may be cooled in still air.



Welding Task Force Proposals (continued)

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TASK FORCE: MR Untermeyer (Chairman), SA Coughlin, PH Williams, R Johnson, LH Strouse, DM Allbritten, A Willaredt, M. Lotfi, J Minton, M. Tate, L. Batis, and D. Ronzani, B. Lee, S. Hopper, R. Morgan, S. McCullough

TF CHARGE: Consider changes in Appendix W requirements.

REFERENCES: LH Strouse 9/11/03; M Untermeyer 03/12/03, 9/4/03, 9/22/03, 3/18/04, 9/10/04, 9/13/04, 9/2/05, 3/13/06, 8/31/06, 3/6/07, 7/13/07X2, 9/12/07, 10/01/09; R Johnson 06/11/03; P Kinnecom 6/12/03, 6/18/03 (CPC-1152), 9/10/04X2, 4/28/05 (CPC-1166), 8/1/05 (CPC-1170), 7/13/07

## North American N.A.R. Program

**Recent Activity:**

At the January 2013 meeting, P. Draper provided the following report:

Data Team: Plan is to analyze the complete 2012 data as soon as remaining incident reports are finalized.

Hardware Team: NH-2011.1 Hinged Manway and Fill Hole Best Practices – Progress continues. Target is to have a document completed by April 2013. HM-2006.1.2: PRD O-rings – goal is to properly assign O-ring failure causes to results in corrective actions.

Process Team: NP-2005.2 Rail Industry NAR Reduction Contact Network (RINRCN) – 111 members as of January 19, 2013. NP-2008.1: Root Cause Analysis (RCA) Failures for gaskets, O-rings & leaks – no activity since October 2012. NP-2008.2: Process Map for AAR Form QA-7.X – no activity since October 2012.

Communication Team: NC-2011.1 Revised NAR Reduction Program Website – Improvements continue. NC-2011.3: NAR Awareness Flyer – No activity since October 2012. NC-2005.2: NAR Recognition Program – 2012 NAR Grand Slam Award winners will be honored at the upcoming AAR Hazardous Materials (BOE) Seminar in May 2013.

At the January 1993 meeting, Mr. Mullins described the educational campaign under way in Canada, wherein shippers and owners are advised quarterly with respect to non-accident releases. Messrs. Principi, Richmond and Lyden discussed the efforts and experiences of their respective organizations. Mr. Fredbeck charged Mr. Richmond to study the Canadian program and to ascertain what can be done in the U.S. It was noted that the BOE Steering Committee might also need to be involved. At the October 1994 conference, Mr. Fredbeck reported that the Canadian non-accident release (NAR) reduction program will become a North American effort and that data management will be conducted by the BOE.

In an e-mail dated 09/20/02, the NAR committee requests that the TCC consider the following three items:

- 1.) Consider an effective date of 1-1-2005, for, “a tank car shall not be qualified if equipped with a slip tube gauging device”.
- 2.) Consider the use of spring-loaded packing glands for all new pressure car liquid and vapor valve applications.
- 3.) Consider a decal or stenciling on the top operating platform or manway cover with: manway style, gasket size, manway bolt numbering location (torque sequence), torque values, plus optional shipper notes.

At the October 2002 meeting, the working group considered the NAR committee’s requests. The working group recommended that a task force be formed to evaluate the first suggestion. It was reported the MGM has a program, detailed on their web site, to exchange slip tubes for magnetic gauging devices. P. Kinnecom requested that the support documentation for this request be forwarded to the TCC. The second request refers to stem packing and would not be applicable to bellows sealed valves. The third suggestion applies to non-pressure cars.

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North American N.A.R. Program, (Continued)

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At the July 2003 meeting, the committee agreed to proposal 1, the removal of slip tube gauging devices, with an effective date of 12/31/2003.

Proposal 2 will go to AC. The committee rejected Proposal 3, as the Tank Car Committee has rejected it in the past. (Staff note – the API representative has requested further consideration of item 1.)

At the October 2003 meeting, Bill Tilker was elected as the new chair for the N.A.R. Working Group. J. Wimberley reviewed the work of the N.A.R. fittings task force to date.

At the executive session, it was noted that API no longer takes exception to the slip-tube gauging device replacement program as agreed to by the committee with an effective date for tank cars being qualified after December 31, 2003. AAR will issue a circular to implement the program accordingly. J. Swezey expressed concern that the program start date of January 1, 2004, might cause some fleet owners compliance issues.

At the January 2004 meeting, Tank Car Committee agreed to adopt paragraph 1.3.9 in M-1002 Chapter 1 as shown below, with the effective date changed to April 1, 2004.

At the April 2004 meeting, W. Tilker reported that the NAR Task Force had formed a small group to review NAR data with the goal of developing recommendations to eliminate NAR's.

Via CPC-1163 dated 6/18/04, AAR issued proposed 1.3.9 for public comment.

At the July 2004 meeting, T. Treichel updated the committee on task force activity. Mr. Tilker is forming sub-groups to focus on specific NAR issues.

At the October 2004 meeting, W. Tilker formed four groups to advance this activity. D. Mullins heads up the communication group, which is working to have a single source for any NAR data and links to related information. J. Bolds is heading the process team, which will be looking at training and other issues. T. Treichel is heading up the data team, which will support the other teams with data and analysis. R. Sobilo is heading up the hardware team, which will be using data to review component issues. Bob Fronczak noted that B. Schoonover has set a goal of a 50% reduction in NARs from a year 2003 baseline by year 2008.

At the April 2005 meeting, B. Tilker reported that the NAR committee had reviewed securement issues. An NAR web site is being developed which will hopefully have links to other web sites. P. Pierce reported that the 5800 packages have been brought up to date. He also indicated that he would be issuing reports to the TCC.

At the October 2005 meeting, B. Tilker updated the committee on initiatives to achieve emissions-free loading. B. Schoonover reported on FRA programs to reduce NAR's. The committee was asked to create a docket to consider spring-loaded packing glands for pressure car valves. (Staff note – docket T80.12.2 was assigned for this effort.)

At the April 2006 meeting, B. Tilker updated the committee on the NAR TF activities. L. Reinartsen has replaced P. Pierce as the staff assistant for the NAR TF.

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North American N.A.R. Program, (Continued)

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At the July 2006 meeting, T. Treichel reported that the data for 2004-2005 is now available and is being reviewed by the NAR TF.

At the October 2006 meeting, B. Tilker reported that the review of the 5800 reports has been completed and that Ethanol shippers identified by this effort have been contacted and supplied with the appropriate information.

At the January 2007 meeting, P. Williams discussed the NS program to meet with ethanol shippers. There is no particular source of issues but most ethanol shippers are new to the industry. NS is producing a video to help the education process. The NS representative asked for a review of safety valve sizing on ethanol cars. T. Phemister noted that he would be fielding train placement issues concerning unit trains for FRA.

At the April 2007 meeting, J. Perez discussed the information that was developed on threaded connections by the hardware sub-group. It was agreed to move that information to docket T90.20 for consideration. Pat Brady has agreed to chair the NAR Group.

At the July 2007 meeting, it was reported that K. Cook has replaced D. Mullins as the head of the communications subgroup.

At the October 2007 meeting the committee was given an update on the current activities of the NAR group.

At the January 2008 meeting, it was reported that M. Forister will hold a conference call on NAR online system to discuss changes. The changes to the 5800 process have been completed. COD

At the April 2008 meeting, M. Forister updated the committee on the TF activities.

At the July 2008 meeting, it was reported that the on-line 5800 Rail Reporter system is being upgraded. The upgrades are to help the users of the system input and extract data. Sam Chapman, new Hazardous Materials Manager at TTCI, will oversee the NAR Reduction Task Force and be responsible for setting up future meetings.

At the October 2008 meeting, it was reported that the next NAR RTF face-to-face meeting will be held during the TCC sub meeting in Colorado Springs on April 15-16, 2009. The NAR TG asked the TCC to open a new docket to evaluate manway designs. Support for this recommendation will be provided to the TF.

At the January 2009 meeting, J. Perez reported that the hardware team has not met recently. Norfolk Southern is putting together a DVD on Loading/Unloading modeled after pamphlet 34 and will be available to the industry once finished. All of the class I railroads have supported the video. This video will be available through the AAR when completed.

At the April 2009 meeting, The NAR Reduction Task Force meeting was held 8-10 am on April 15, 2009 before TCC Sub1. The Hardware, Process, Data, and Communication team leader provided a PowerPoint presentation on the dockets they are working on. All of this material will be available at <http://nar.aar.com/>. AAR will send an email out to the industry asking for volunteers to chair the NAR Reduction Task Force and a team leader for the hardware subgroup.

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North American N.A.R. Program, (Continued)

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At the July 2009 meeting, J. Perez reported that he is no longer the Chair of NAR Hardware Team. M. Clark is the new chair of the Hardware team. P. Brady (BNSF), current Chairman of the NAR Reduction Task Force, is looking his replacement as Chairman.

At the October 2009 meeting, J. Bolds reported on the activity of the NAR Reduction Task Force (RTF). M. Clark is the new chair for the hardware team. J. Bart, chair of the Chlorine Institute Transportation Issue Team, gave a presentation on the Chlorine Institute NAR reduction activities. She mentioned reducing CI's NAR's 50% by 2010. All NAR RTF Team presentation can be found on-line at [www.nar.aar.com](http://www.nar.aar.com) under the events link.

At the January 2010 meeting, J. Perez reported on the current efforts being made by the NAR Reduction Task Force teams. Process team is reviewing the correlation between 7.1 conformity and NARRI scores. The Hardware team is reviewing rupture disc holders and o-rings. The Data team is working on the report for the April 2010 NAR meeting and AAR/BOE Annual Hazardous Materials Seminar in May 2010. The Communications Team has successfully worked on publishing an article in the Bio-fuel journal. The Process team is currently reviewing root causes for gaskets and o-rings to develop a map for root cause analysis.

K. Dorsey had mentioned that help is needed to sort out 7.1 forms in particular when it is related to valves and fittings dealing with o-rings. It was noted that the 7.1 program needs to be reviewed to make it more user friendly, improve accuracy and achieve a higher percentage of compliance.

At the April 2010 meeting, The NAR RTF reported that were 701 NAR's in 2008 and 592 NAR's in 2009. That is a 15.5% reduction in NAR's from year-to-year. Since 1996 NAR's have been reduced by 52%. The Data, Process, Communication, and Hardware team leaders from the NAR Reduction Task Force provided updates to the TCC via PowerPoint presentation. Mike Clark from Salco provided an update on the Salco Quick Inspect safety vent. He provided to those interested laminated instruction sheets and an instructional DVD. K. DeAngelis from Nova Chemicals provided lessons learn presentation on a recent NAR root cause investigation dealing with Aromatic Concentrate in a DOT111A100W1 tank car. Ian Kibblewhite, President and CEO of Load Control Technologies, gave a presentation over i-bolt ultrasonic fastener technology. D. Mullins from GATX announced that Do' and Don'ts posters are available for handling LPG, Anhydrous Ammonia Pressure Cars as well as for General Service Cars. All presentation provided during the meeting have been made available for download by selecting the "Events" tab on the AAR NAR website at [www.nar.aar.com](http://www.nar.aar.com). Select "reference material" tab for the Do's and Don'ts poster from GATX.

At the July 2010 meeting, this docket was COD.

At the October 2010 meeting, S. Chapman reported on the activity of the NAR RTF. BNSF stated that they have seen a 27% increase in NAR's in 2010 versus 2009 statistics. S. Chapman discussed the current efforts being made to build a Rail Industry NAR Reduction Contact Network. Presentations from each NAR RTF can be found on-line at <http://nar.aar.com/nar-events.htm>

At the January 2011 meeting, T. Treichel reported that there is a 5% increase in NAR's compared to last year. The TCC discussed ways of notifying the shippers of their NAR's. AAR stated that efforts are being made to build a Rail Industry NAR Reduction Contact Network to help in the notification process. The TCC feels that "Action Packages" should be send to the shippers and therefore the TCC recommends that the Hazardous Materials (BOE) Committee reinstitute "Action Packages".

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North American N.A.R. Program, (Continued)

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At the April 2011 meeting, S. Chapman provided an update on team reports. The data team report identified that there has been a 45% reduction in NAR's since 1996, however there hasn't been much change in the number of NAR's since 2004. Liquid Line component lead's NAR's on pressure cars while manways continue to lead NAR's on non-pressure cars. The hardware team PRD o-ring work has concluded with information developed but no recommendation required. The hardware team is looking for guidance from the TCC. NAR contact network will be demonstrated at the October 2011 TCC meeting. The process team plan to look into procedures for operating hinged manway and hinged fill hole. The communication team plans to help add input on the upgrades to the NAR website. A flyer is being made to outline the risk of NAR's and where information can be found to help reduce NAR's.

At the July 2011 meeting, T. Treichel reported that AAR has published the 2010 Annual Report of Hazardous Materials Transported by Rail and the Report of Railroad Tank Car Leaks of Hazardous Materials by Commodity and Source of Leak.

At the October 2011 meeting, S. Chapman provided a brief summary of the NAR reduction TF meeting held the day before. Sam stated that all reports will be posted on the NAR website [www.nar.aar.com](http://www.nar.aar.com) shortly after the meeting.

At the January 2012 meeting, P. Student stated that the new NAR website is up and running. A new NAR cost calculator has been added as a feature to the website. T. Treichel explained the matrix being developed to provide full description of NARRI cause codes. The intention is to provide a picture of the various defects to go along with the full description making it easier for the individual filing out the report to select the most accurate NARRI cause code.

At the April 2012 meeting, S. Chapman reported that each team from the NAR Reduction Task Force (NAR RTF) provided an update prior to Sub 1 TCC meeting. All presentations will be made available through the NAR website at [www.nar.aar.com](http://www.nar.aar.com).

Here are the highlights from each NAR RTF team's presentation:

*Data Team:*

- NAR Reduction (49% since 1996, 6% since 2004)
- Currently collecting Root Cause Analysis (RCA) data but haven't yet analyzed it
- Injuries resulting from NARs emphasize the safety impacts of NARs
- Certain data breakdowns suggest improved NAR reduction in Canada compared to U.S. but further investigation must occur for complete understanding to be achieved
- Certain data breakdowns suggest it worthwhile to also direct NAR reduction efforts toward the consignee communities for specific commodities

*Hardware Team:*

- NH-2011.1: Hinged Manway/Fill Hole Cover Best Practices
  - Target is to have document completed by October 2012
- NH-2006.1.2: PRD O-rings
  - 2 sub-teams have concluded their efforts with good insights developed
  - 1 sub-team continues work toward proper assignment of O-ring failure causes to ultimately result in corrective action to refine current set of cause codes and refine poster to act as a guideline
  - A summary of all efforts will be completed once all work is finalized

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North American N.A.R. Program, (Continued)

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*Process Team:*

- NP-2005.2: Rail Industry NAR Reduction Contact Network (RINRCN)
  - Released to industry in January 2012
  - Announced to industry in April 2012 (CPC-1238 and general distribution was made to industry organizations)
- NP-2008.1: Root Cause Analysis (RCA) Failures for gaskets, o-rings & leaks
  - No activity since October 2011
- NP-2008.2: Process Map for AAR Form QA-7.X
  - No activity since October 2011

*Communications Team:*

- NC-2011.1: Revised NAR Reduction Program Website
  - Released to industry in January 2012
  - Announced to industry in April 2012
  - Certain improvements remain to implement as time and resources allow
- NC-2011.3: NAR Awareness Flyer
  - Develop 2 page flyer to be distributed throughout industry
    - Page 1 will identify the risks of NARs
    - Page 2 will identify available resources for NAR reduction, including the NAR Reduction Program website
  - No activity since October 2011
- NC-2005.2: NAR Recognition Program
  - 2011 Grand Slam Awards will be posted to website ASAP and announced in May 2012 at the AAR/BOE Hazardous Materials Seminar

At the July 2012 meeting, the contact database is operational. If anyone has an interest in the NAR issue, they should register. The hardware group is working on manway cover best practices and proper assignment of O-ring failure codes to improve reporting. Grand Slam award winners are posted on the NAR website. M. Maday replaced K. Koch as the Communications Team lead.

At the October 2012 meeting, S. Chapman summarized the presentation the NAR Reduction Task Force provided on October 17<sup>th</sup>. There is a 48% reduction in NAR's since 1996. Greater success in NAR reduction in Canada versus the US and the TF is looking into this. Currently the NAR RTF is collecting root cause analysis data. Under the data team presentation information was added in regard to injuries. AAR is working on refining the NARRI cause codes related to o-rings. The O-ring information poster is viewable on the NAR website. As of October 17, 2012 103 individuals have joined the NAR contact network. Sam encouraged those that have not entered in their information into the network to do so. A NAR awareness flyer is being developed.

The Chlorine Institute (CI) provided a presentation during the meeting focus on improved communication to facilities shipping Chlorine, Caustic, and Hydrochloric Acid.

North American N.A.R. Program, (Continued)

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At the January 2013 meeting, P. Draper provided the following report:

Data Team: Plan is to analyze the complete 2012 data as soon as remaining incident reports are finalized.

Hardware Team: NH-2011.1 Hinged Manway and Fill Hole Best Practices – Progress continues. Target is to have a document completed by April 2013. HM-2006.1.2: PRD O-rings – goal is to properly assign O-ring failure causes to results in corrective actions.

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REFERENCES: J. Wimberley 09/20/02, 02/21/03; P Kinnecom 02/24/03, 8/1/03, 8/2/03, 8/5/03, 6/18/04 (CPC-1163), 8/1/05 (CPC-1170); T Dalrymple 8/21/03, 4/14/05; CI Taverner 7/29/03, 8/1/03, 8/4/03; T. Treichel 4/19/04, 4/14/05X2, 8/21/06, 8/24/06; J Perez 3/15/07



## Evaluation and use of Nondestructive Evaluation Techniques

**Recent Activity:**

At the January 2013 meeting, K. Dorsey stated that comments still need to be address on appendix T.

Via letter dated 12/18/01, T. DeLafosse provided the following update:

On Friday, November 30, 2001 the NDT Task Force had a conference call to discuss the many comments we all shared with how to implement the 49 CFR 179.7 (b)(10) requirement that states:

“Procedures for evaluating the inspection and test technique employed, including the accessibility of the area and the sensitivity and reliability of the inspection and test technique and minimum detectable crack length”, into Appendix T. The task force wants to do what the regulations require but is unsure how to accomplish it.

In Jim Rader’s presentation during the October 2001 Tank Car meetings he mentioned in his handout that “In qualifying people and procedures, employees must have a system for determining what the minimal detectable defect size is for the non-destructive examination used (i.e., defining the reliability and sensitivity of the process)”. Since we all share somewhat differing opinions we have summarized the comments from our conference call and request FRA, TC, and Tank Car Committee direction to help focus our path forward to ensure our efforts comply with the regulatory and industry requirements and goals.

1. What are the TCC expectations for POD and does it apply to all tank car weld defects new and in-service, and potential weld defect locations?
2. Define new car construction requirements (existing inspection requirements require that only 1 in 20 tanks be x-rayed, and nothing is required extra in the bottom four (4) feet of the car (UT, RT, VT?). Does each builder define what inspection method to use, or will the industry decide this? Once this is decided, then establish the repair shop expectations. **Note:** FRA states tank qualification is required for new car construction. Does AAR agree that this includes girth seam and attachment fillet welds > 1/4” which are only spot radiographed now?
3. Once the significant flaws are defined, how will they be developed and maintained? Is going through TTC the only way this can be accomplished? How will funding be decided and obtained to existing and future needs?
4. What will the industry really gain from this massive cost and manpower burden to obtain method and operator qualification?
5. Will procedures and personnel need to be qualified on actual specimens and, if so, how many specimens should be used and what should the PASS/FAIL criteria be?
6. Will the TCC specify the minimum detectable flaw size that needs to be reliably detected in #5 above, and how would that relate to critical crack sizes for tank cars?

Evaluation and use of Nondestructive Evaluation Techniques

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The task force feels that there is still a large gap between industry-wide compliance with Appendix T. Any new requirements for qualification would widen that gap, at least in the short run. If procedure and personnel qualification is required, training would be crucial in achieving the needed proficiency for most of the industry with the attendant costs. Each type of defect, in each different type of weld configuration will need numerous flawed specimens to qualify each procedure. This will place a cost burden on those companies that choose to qualify while allowing those companies that choose not to qualify to maintain an unfair competitive advantage.

Additionally, if the TCC intends for all tank car facilities to qualify NDT procedures and personnel the TCC should provide a uniform set of guidelines to the industry to accomplish this. Until the task force defines the expectations from the TCC, the task force is at a standstill on this issue.

A proposed addition for NDT procedure and personnel qualification to Appendix T that was developed as a guideline for the task force's conference call has been included below. Not all members agreed with this but it should give the working group an idea of what the task force is considering necessary to qualify procedures and personnel should the TCC feel it required.

At the January 2002 meeting, the committee approved the following as guidance for the task force:

1. The task force should develop a bench test to be used for the qualification of personnel.
2. Industry personnel should be used as a group to evaluate, compare, and rank techniques for possible use in determining inspection intervals. **Each NDE method is to be evaluated, compared and ranked using actual tank cars in actual facilities under conditions typically found in facilities. The methods are to be compared and contrasted to identify at least a general and relative description of the capabilities and limitations of each method.**
3. Emphasis should be placed on focused inspections on known tank problem areas.

At the April 2002 meeting, T. DeLafosse brought the committee up to date on the current work of the task force. The task force has developed a roadmap forward which will result in a POD of 90% with a confidence level of 95%. The Chlorine Institute has asked that chemical reactivity be considered as an alternative to bubble leak testing.

At the October 2002 meeting, the working group approved the proposed revision to Appendix T with the changes as presented by T. DeLafosse. The draft guidelines were to be discussed at the NDT workshop that was conducted following the meeting.

At the January 2003 meeting, the committee adopted the proposed revision of Appendix T with edits. This was subject of circular no. CPC-1149, issued 03/26/2003 for public comment. Via e-mail dated 04/02/03, Doug Edgel has been added to the task force.

At the April 2003 meeting, J. Dinell reported that D. Gardner has replaced M. Bentley on the TF. The current published version of Appendix T, effective 7/1/2003, was approved by the committee and is contained in CPC-1155 dated 06/25/03. Some of Edgel's and Riedlinger's comments remain to be addressed by the task force.

At the July 2003 meeting, Paul Kinnecom discussed CPC-1155, which released the revised Appendix T.

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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The AAR received information on the termination of a letter of understanding between ASNT and Natural Resources Canada. At issue was the certification of NDT personnel without examination. Staff would like to know what effect this will have on Appendix T.

**The following status report was received via e-mail dated 9/24/03.**

**Action Items the Task Force (TF) is currently undertaking.**

1. The TF in the process of including requirements for Visible and Ultrasonic leak detection techniques into Appendix T. The latest revision of App. T lists requirements for Bubble Leak, Pressure Change, Halogen Diode, Mass Spectrometer, and Chemical Reactivity.
2. The TF is working on including training and experience requirements for direct visual weld inspectors (VT) directly into Appendix T. Currently VT requirements are referenced to AWS B5.2 (formerly AWS QC2)
3. The new requirements in Appendix T require documentation of the NDT procedure qualifications (PQR). Reference Paragraph 1.19 in CPC-1155 (see below).

*1.19.3.2 The NDT Level III and a minimum of one other qualified individual shall witness the demonstration of the procedure.*

*1.19.3.3 Results of the procedure demonstration shall be documented using an NDT Procedure Qualification Record having spaces to record the procedure identification, signatures and date. In addition, the applicable NDT report form referenced in the procedure being qualified shall be completed and describe the demonstration specimen and results.*

**Figure 1** is a draft document the task force will soon be including into Appendix T to satisfy the requirements of 1.19.3.3.

4. The task force is working on defining the requirements of the NDT Level III and the NDT Level III subcontractor. The task force feels the current requirements are vague.
5. The TF is currently addressing the issue of Natural Resources Canada's cancellation of the September 17, 1998 Memorandum of Understanding (MOU) between the Ministry of Natural Resources Canada and the American Society for Nondestructive Testing (ASNT). The MOU concerned the "Harmonization of NDT Personnel Certification. The current problem centers on ASNT's Central Certification Program (ACCP) transition rules. Natural Resources Canada currently does not recognize ASNT's Central

Certification. The TF feels this is an important issue that the industry should be aware of.

1. The TF is working on restructuring and better defining the NDT reporting requirements.

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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At the October 2003 meeting, J. Dinell updated the group on the current status of this docket. He recommended that central certification of NDT personnel not be recognized until the "certification without examination" issue has been resolved. He proposed consolidation of the qualification requirements for NDT personnel into Appendix T rather than referencing ASNT standards. He also proposed that AAR should issue a circular to implement the foregoing.

The committee agreed that the task force should proceed with a draft circular and appropriate revision to Appendix T.

At the January 2004 meeting, this docket is continued awaiting task force work.

At the April 2004 meeting, J. Dinell reviewed the proposal dated 3/22/04. L. Strouse discussed the proposal and answered questions about the qualification of personnel, to establish a desired level of confidence that a particular flaw could be detected. D. Ronzani noted that although some necessary information is not yet in place, such as flaw samples for testing, the proposed procedure seems to be what is needed. G. Garcia reported that draft reports on TTCI's work to date are due to FRA soon. There is some concern over the ability to detect leaks on cars equipped with top fittings protection. The committee discussed use of flaw specimens. They questioned whether specimens would be stored at TTCI and testing would be performed there for certification or whether the specimen would be moved to the tank car facility with a TTCI custodian. G. Garcia discussed development of NDT testing techniques to qualify Mexican bolsters. The techniques used to develop procedures to qualify personnel and evaluate the safety of the bolsters were reviewed.

The committee discussed ways to progress improvements in NDT processes. It was decided that docket T88.1 will be used to develop long-term advances in NDT technology and qualification procedures. A new docket will be opened at the July 2004 meeting which will be charged with the development of changes needed to current NDT requirements. COD.

At the July 2004 meeting, the committee formed a new task force to focus on near-term Appendix T issues. New task force members are W. Fencl, R. Walters, and D. Ronzani. The task forces need to determine what information contained in the old docket is considered to be near-term. Docket for the new task force is T88.1.4.

At the October 2004 meeting, J. Dinell reported that the current task force is working on near-term changes to M-1002 and does not feel that a new docket (T88.1.4) is required to accomplish this. The task force presented a revised proposal for changes to Appendix T and would like the rest of their previous work to be considered as a recommended practice to be used as a basis for a shop to move forward with their own programs. The task force is also working on better defining requirements for NDT level 3. M Lotfi was added to the task force.

At the January 2005 meeting, this committee agreed to the proposed revisions to Appendix T that were presented in the 1/05 background.

At the April 2005 meeting, J. Dinell reported that the task force is reviewing requirements for visual inspectors and visual inspection reporting.

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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CPC-1168, dated 5/17/05, was issued soliciting comments on changes to NDT requirements that were accepted at the 1/05 meeting.

At the July 2005 meeting, this docket was COD for task force work.

CPC-1170, dated 8/1/05, was issued implementing the changes from CPC-1168.

At the October 2005 meeting, J. Miori, M. Droge, B. Banas and D. Gardner were removed from the TF, and S. McCullough was added. The TF is currently working on welding inspector and thermography requirements. A proposal may be available at the April 2006 meeting.

At the January 2006 meeting, Mike Richardson reported that the task force will have a proposal ready for the April 2006 meeting.

At the April 2006 meeting, J. Dinell reviewed the current proposal. It was agreed to progress the current proposal to the executive docket. The committee agreed to adopt the proposal as shown below. FRA will review the proposal prior to incorporation by reference. Mike Tait has been added to this task force.

At the July 2006 meeting, K. Dorsey noted that 49 CFR still references the 2000 publication of M-1002. T. Phemister will look into incorporating the latest reference and will let the TCC know if any input is required.

At the October 2006 meeting, J. Dinell requested that the accepted proposal be issued for comment as soon as possible.

At the January 2007 meeting, P. Kinnecom discussed the issue with using ultrasonic testing for new car production. It was noted that anyone wishing to use that method was encouraged to apply for an exemption from DOT, pending their recognition of the October 1, 2003 issue of M-1002. AAR staff will publish the approved proposals on this docket as soon as possible. (Staff note: The publication will be part of the 2007 M-1002 issuance.)

At the April 2007 meeting, J. Dinell noted a small change to paragraph 10.0 in the proposal shown below. There may be a new proposal for the October 2007 meeting.

At the July 2007 meeting, this docket was COD for TF work.

At the October 2007 meeting, J. Dinell discussed the current proposal. The working group agreed to move the proposal forward to the executive committee. D. Allbritten was added to this TF. AAR staff will check to make sure CPC-1155 was included in the new M-1002 2007 issue.

At the January 2008 meeting, the committee accepted the following proposal (Subsequently removed for docket).

At the April 2008 meeting, J. Dinell updated the committee on TF progress. The TCC referred the question of the pressure used to leak test pressure cars to this TF at the January meeting. The TF is still considering its response.

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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At the July 2008 meeting, the committee asked that the TF give input on the procedure of leak testing of tank cars at 60 psi lower than that maybe operating at 100psi. K. Dorsey commented that the POD work was still scheduled to be published in the "Annual Report" and placed in appendix U. It was reported that the TF may have a proposal at the October 2008 meeting. COD

At the October 2008 meeting, J. Dinell reported he is reviewing the difference between tank operating pressure and valve test pressure. It was reported that the proposal dated 9/12/08 which includes changes to paragraph 1.3, and sections 1.10.2 and 1.13.1. The WG agreed to move the proposal to the executive committee R. Morgan from GA was added to the task force.

At the January 2009 meeting, K. Dorsey discussed the proposed changes to appendix T that was passed from the TF to the executive TCC. Motion made to approved and accepted the proposed changes as written. TCC agreed.

A question was raised about how M-1002 will be handled in the future as the updates move towards direct inserts into M-1002. T. Phemister will talk to PHMSA to see if a revised document can be accepted each year.

At the April 2009 meeting, J. Dinell reported on the several new proposals in the docket. Subcommittee agreed to have the proposal reviewed by the executive TCC. TF is working on a white paper which will be followed by a work shop on the requirements of the Level III to reduce confusion. Appendix D 4.1.2.1 needs to have an additional bullet point in order to address the need to have a level III on staff per appendix D. J. Dinell addressed the question how can you test at pressure lower than the operating pressure. He noted that most companies prohibit pressurizing car above certain pressures for safety. Sensitivity is achieved for this purpose using dwell time. So by extending the dwell time you can increase the sensitivity of the leak test. With the types of test available in appendix T there is the ability to have high sensitivity. The committee felt that leak test procedures would still need to be reviewed unless the level III can address the sensitivity requirement. J. Dinell is stepping down as Chair of the TF. New TF Chair recommendation is D. Ronzani.

At the July 2009 meeting, K. Dorsey reported that J. Dinell stepped down as chair and D. Ronzani is the new chair. COD for TF work

At the October 2009 meeting, D. Ronzani reported that no proposal is available at this time. Previous approved proposals have been sent to the technical writers for inclusion into the manual. Next proposal will be available at the April TCC.

At the January 2010 meeting, K. Dorsey reported that D. Ronzani is waiting for the updated appendices to be published prior to developing further changes.

At the April 2010 meeting, K. Dorsey reported that D. Ronzani will develop further changes once updates have been made to the appropriate appendices and have been published.

At the July 2010 meeting, K. Dorsey reported that the technical writer is working on Appendix T of M-1002 and implementation is soon to follow. COD

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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At the October 2010 meeting, D. Ronzani reported that the TF continues to work on improvements to Appendix T. He stated that the TF has concerns on the implementation date of the proposed changes being added to appendix T and suggest there be an interim date established.

(Staff Note: J. Dinell, M. Lotfi, and S. McCullough were asked to be removed from the TF.)

Following the October 2010 meeting, questions have been posed concerning “In-house” certification if NDT LVL III personnel. The TF has agreed to work on wording to clarify the need for an “In-house NDT inspector to be a full time employee of the company he is working for. These questions have also highlighted the need to work with ASNT to establish Bubble Leak Test as a separate examination. This is deemed desirable to remove barriers to inspectors receiving an ASNT certification.

At the January 2011 meeting, K. Dorsey reported on the questions that have been posed concerning “In-house” certification if NDT LVL III personnel. The TF has agreed to work on wording to clarify the need for an “In-house” NDT inspector to be a full time employee of the company he is working for. These questions have also highlighted the need to work with ASNT to establish Bubble Leak Test as a separate examination. This is deemed desirable to remove barriers to inspectors receiving an ASNT certification.

**Staff Note:** CPC-1227 was published 3/24/11 covering Appendix T revisions.

At the April 2011 meeting, D. Ronzani reported that the TF has met several times since the last TCC meeting. They have focused on addressing the issues around the certification of level III personnel. The TF would like to include an effective date to the wording within CPC-1227. Due to the number of significant comments received AAR plans to publish a second CPC after discussing the comments with the TF. The following individuals will be added to the TF: C. Meeker, G. Alderson K. Woloszyk, J. Dinell.

At the July 2011 meeting, this docket was COD.

At the October 2011 meeting, D. Ronzani reported that the TF met recently to discuss CPC-1227 titled “Request for comments on the revisions of M-1002 Appendix T”. The TF asked for an opportunity to review the FRA comments once they become available.

At the January 2012 meeting, the comments AAR received from DOT were provided to the TF.  
COD

At the April 2012 meeting, K. Dorsey reported that a CPC will be issued on the portion of the proposal that has been resolved by the TF and a separate CPC will be issued on the portions not yet resolved. TF will provide AAR with the final proposal and those issues still yet to be resolved.

The following individuals will be added to the TF: Sarah Hopper and Steve McCullough

Evaluation and use of Nondestructive Evaluation Techniques (Continued)

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At the July 2012 meeting, the Appendix T proposals have been received back from the Tech writer. There are some broken links (references which point to the wrong section) which have to be fixed. Maintenance plan authors need to select non-destructive techniques understanding that each has its strengths and weaknesses. It might be worthwhile to make some statements about the strengths and weaknesses of each technique in any future re-write of appendix T.

At the October 2012 meeting, K. Dorsey stated that appendix T will go back out for comment via CPC. D. Ronzani stated that the in-house level III is still being discussed within the TF. The in-house is not defined in appendix T. The intent of in-house level III would have at least one level III on staff with at least one method certified by a certified agency.

It was requested to remove from the TF: Greg Garcia, Sam Ternowchek, and Paul Williams  
It was requested to add to the TF: Jason Riggs and Brad Howard

At the January 2013 meeting, K. Dorsey stated that comments still need to be address on appendix T.

CURRENT TF: D. Ronzani(Ch.), D. Cole, R. Johnson, L. Strouse, R. Guerrero, R. Walters, J. Hays, D. Edgel, M Tait, D Allbritten, R. Morgan, C. Meeker, G. Alderson K. Woloszyk, J. Dinell, S. Hopper, S. McCullough, J. Riggs, B. Howard

TF CHARGE: Address NDT issues for all methods, excluding AE.

REFERENCES: PG Kinnecom 11/14/02, 03/21/03, 03/24/03, 03/26/03 (CPC-1149), 6/25/03 (CPC-1155), 3/3/04, 1/19/05, 5/17/05 (CPC-1168), 8/1/05 (CPC-1170); TE DeLafosse 03/28/03(2), 4/10/03; DJ Ronzani 9/29/04, 1/5/2011; T. Dalrymple 08/05/02 X 2, 11/15/02, 3/11/04 ; M. Lyden 11/18/02; P Student 11/16/02; J Lewis 11/15/02; J Dinell 04/18/03, 5/5/03, 9/24/03, 10/23/03 (handout), 3/22/04, 10/21/04 (handout),11/22/04, 1/13/05, 1/14/05, 3/24/06, 9/7/07, 9/13/08; D Edgel 3/31/03; M Riedlinger 04/10/03; H Taber 3/11/04; M Lotfi 7/19/04



Tank Car NDE Project

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**Recent Activity:**

At the January 2013 meeting, F. Gonzalez stated that a contract is being work on and a report is being reviewed.

This docket was opened in October 1996 to track the progress of the program under way at AAR's Transportation Technology Center to evaluate methods of nondestructive testing. This program, entitled the Tank Car NDE (nondestructive evaluation) Project, will employ various NDE methods on seven different tank cars in a controlled environment. This approach will yield information on the effectiveness of the different types of NDE and show where their application is most effective.

At the April 2000 meeting, GA Garcia made a presentation on the study. The final report has been delivered to FRA and is under review there. Work on Phase 2 continues, including determining probabilities of detection (PODs) and developing a defect library. Roger Sims will check the database to see how much data he has on circumferential weld defects found in real inspections.

At the October 2000 meeting, K Koch reported that film interpretation by industry is in progress, inspection has been completed and data are being evaluated.

At the October 2001 meeting, J. Pena advised that TTCI was finalizing the report. G. Garcia updated the working group on emerging technologies now being researched. He also stated that the performance levels observed in X-ray tests were consistent with other industries.

At the April 2002 meeting, P. Williams brought the committee up to date on the current NDT work being done at TTCI. The defect library is being created along with master gages. The next addition to the library will be fillet weld defects.

At the October 2002 meeting it was reported that TTCI is progressing bubble leak test qualification. Fillet weld defect panels are being produced and will become part of the defect library. FRA reported that report 01-04 is available from J. Pena.

At the July 2003 meeting, J. Peña advised that the report from FRA is now available. AAR staff will distribute to the committee (summary sent 11/21/03).

At the October 2003 meeting, G. Garcia updated the committee on the continuing effort to develop NDT weld defect samples.

At the January 2004 meeting, it was reported that G. Garcia is continuing his work on NDE flaw samples. He is now working on fillet welds. The samples for butt welds are complete.

Tank Car NDE Project (Cont)

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At the April 2004 meeting, G. Garcia discussed development of NDT testing techniques to qualify Mexican bolsters. The techniques used to develop procedures to qualify personnel and evaluate the safety of the bolsters were reviewed.

At the July 2004 meeting, J. Pena reported the work on fillet welds might be complete by October 2004. This docket is COD.

At the October 2004 meeting, Kevin Koch updated the committee on the Fillet Weld POD project, which is near completion. TTCI is now proceeding with the "Have Crack Will Travel" POD Qualification evaluation. TTCI is beginning eddy current NDT investigation and conducting an FRA inspector training program for POD. Industry participation is invited on the eddy current project and the Fillet Weld POD project.

There was no activity on this docket at the January 2005 meeting.

At the April 2005 meeting, F. Gonzales reported that the fillet weld POD report would be available in the near future. Defect library training for FRA inspectors will be conducted in 2006.

At the July 2005 meeting, F. Gonzalez noted that there will be a report on the progress of this docket at the October 2005 meeting.

At the October 2005 meeting, F. Gonzalez reported that the Phase II report has not been published yet. Volunteers are needed to try the weld defect library. Inspectors from FRA will be using the library for training.

At the January 2006 meeting, Francisco Gonzalez reported that DOT has conducted an eddy current NDT evaluation, reports for which should be available soon. The "have cracks will travel program" is looking for two more industry sites for program evaluation.

At the April 2006 meeting, Francisco Gonzalez reported that DOT is continuing work on NDT POD research. W. Rummel will be completing the project. A report on the use of eddy current is currently being drafted.

At the July 2006 meeting, F. Gonzalez noted that the NDE Phase II report should be published in August 2006.

At the October 2006 meeting F. Gonzalez reported that the POD report is still in process for completion. FRA representatives would like to add data from two or three more facilities to the database. The eddy current testing is still moving forward. FRA is preparing to evaluate the PODs for bubble leak tests and thermal inspections. Union Tank Car offered to participate in the FRA facility testing.

At the January 2007 meeting, F. Gonzalez reported that the Phase II report was still going through the approval process. FRA is conducting training on the newly developed POD information with their inspectors. FRA is still evaluating eddy current technology.

Tank Car NDE Project (Cont)

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At the April 2007 meeting, F. Gonzalez reported that the POD report would be published and available prior to the next TCC meeting.

At the July 2007 meeting, F. Gonzalez reported that G. Garcia's report is being reviewed and may be available for the October 2007 meeting.

At the October 2007 meeting, F. Gonzalez reported that G. Garcia's Phase II report is being reviewed and might be available for distribution by the end of the year. Phase III is expected to start in November 2007. POD training is part of Phase III.

At the January 2008 meeting, it was reported that the comments on the Phase II report from FRA have been sent to G. Garcia and the report is expected to be complete shortly. Phase 3 was started in November 2007. POD training for FRA inspectors will be part of this phase and will occur sometime in the summer of 2008. DOT plans to share the cost of POD testing with companies.

At the April 2008 meeting, F. Gonzalez reported that the "Have Cracks Will Travel" pates are being returned to TTCI to be renewed and validated. Two more companies will be evaluated to help establish the baseline for testing.

At the July 2008 meeting, it was reported that comments to the next phase of the NDE report have been given by FRA and TC to TTCI for review and incorporation.

At the October 2008 meeting, G. Garcia from TTCI report results determined during the POD research efforts. A comparison of visual and magnetic particle test methods was shown. The magnetic particle test method has been determined to be a more consistent and sensitive method versus the visual test method. Plan is to perform 2 more POD's by the middle of 2009 and a final report will be available in 2009.

At the January 2009 meeting, it was reported that the bubble leak and magnetic particle NDE is being tested at TTCI. A report should be available by this summer. The FRA has notified TTCI that this report needs to be completed ASAP. COD

At the April 2009 meeting, F. Gonzales reported that the second phase of the POD study had been completed. The report is being reviewed and expected to be completed by the end of the April 2009. G. Garcia from TTCI reported on the bubble leak test procedures and commented on sensitivity. Other leak test samples will be performed over the next year. TTCI will be looking at different leak rates and how variation in pressure may affect the rates. TTCI is finishing up the bubble leak test report and will be developing bubble leak test sample which they will provide to FRA. FRA plans to use them in audits.

At the July 2009 meeting, F. Gonzalez reported that the Phase II report has been published and is available on the FRA web site. The program continues with TTCI on further POD (probability of detection) testing and completion of reports. The next area of interest is the bubble leak test. The test plates for "Have Cracks Will Travel" are being renewed by TTCI.

Tank Car NDE Project (Cont)

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At the October 2009 meeting, F. Gonzalez reported that the railroad tank car nondestructive methods evaluation report was published in June 2009. G. Garcia (TTCI) is working with a few companies trying to get them to perform two more Probability of Detection (POD) test sets.

At the January 2010 meeting, F. Gonzalez reported that G. Garcia of TTCI is looking for two companies that are willing to perform other nondestructive methods. The cost will be shared by the FRA and the company selected. Efforts are being made to schedule the work for this year.

At the April 2010 meeting, F. Gonzalez gave presentation during the meeting and has agreed to provide it AAR to share with the industry. FRA's presentation provided information on the FRA research program structure, logic model, technical approach, and current research projects. Three areas of focus included FRA's risk assessment, structural integrity and crashworthiness, and fittings protection.

At the July 2010 meeting, F. Gonzalez reported that no new information is available at this time. F. Gonzalez reported that G. Garcia of TTCI is looking for two companies to volunteer to perform each type of nondestructive methods to establish a greater sampling of test results.

At the October 2010 meeting, F. Gonzalez reported on the POD evaluation techniques being performed at TTCI. F. Gonzalez stated that two companies agreed to perform each type of nondestructive method. One company is scheduled to perform each test by the end of 2010 and the other company agreed to perform each test first part of 2011.

At the January 2011 meeting, F. Gonzalez reported that TTCI has two companies contracted to perform NDE testing. Once these two companies complete their testing the FRA will combined all data and provide a report. Bubble leak test is included in the testing being performed.

At the April 2011 meeting, F. Gonzalez reported that two companies recently finished NDE testing and one of them plans to perform the testing a second time. The goal is to complete the NDE testing by the summer of 2011.

At the July 2011 meeting, F. Gonzalez reported on this effort under the FRA research program within T59. The NDE testing is ongoing and the results from this research might lead to regulations on the probability of detection. F. Gonzalez also stated that FRA is going to provide training to the FRA QA inspectors on how to perform NDE inspections.

At the October 2011 meeting, F. Gonzalez reported on this effort under the FRA research program within T59. The NDE testing program at TTCI is ongoing. The POD curves on all methods will be finalized after all testing is complete. FRA inspectors will go through training on these methods once the POD curves are finalized.

Tank Car NDE Project (Cont)

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At the April 2012 meeting, F. Gonzalez reported on these efforts under docket T59 in Sub 1. Francisco stated that the plan is to take the test panels from TTCI out to Chicago so that shops have an opportunity to perform crack detection test on those panels. The goal is to collect more data points which will eventually be added to the Probability of Detection (POD) curve for each NDT method.

At the January 2012 meeting, F. Gonzalez stated that staff from FRA, Transport Canada, and AAR participated in training on Probability of Detection (POD) methods in Pueblo, CO the week of November 28, 2011 at TTCI.

At the July 2012 meeting, it was reported that G. Garcia has left TTCI for Rocky Mountain Steel. TTCI plans to hire two people to take his place. A draft report on non-destructive testing is being reviewed by FRA. TTCI still has plans to have smaller companies test on the cracks to compare results.

At the October 2012 meeting, F. Gonzalez reported that Lucas Welander has replaced Greg Garcia at TTCI and will head up the "Have Cracks Will Travel" program. The draft report on non-destructive testing work continues to make its round through DOT.

At the January 2013 meeting, F. Gonzalez stated that a contract is being work on and a report is being reviewed.

REFERENCES: P Kinnecom 11/21/03 - FRA Report

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Consider Responsibilities of Parties in Tank Car Maintenance

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**Recent Activity:**

At the January 2013 meeting, HM-216B was to address some of these TF efforts. COD

This docket was opened to clarify the roles and responsibilities of parties with regards to tank car maintenance.

At the July 2004 meeting, K. Dorsey discussed this docket with the committee. J. Swezey pointed out that there is a problem with shippers modifying cars without the knowledge or permission of the car owner. J. Byrne reported that the UMLER redesign will include a field for maintenance responsibility. It may help indicate who is responsible for maintenance if it is other than the car owner. J. Swezey may furnish an alternative proposal, as the current proposal is possibly too detailed. M. Lyden proposed that TCC members should form a task force to look at the issue. At this point, the task force consists of J. Wimberley, TCI to be determined, ACC to be determined (TBD), D. Mullins (Chairman), J. Byrne, A. Maty, T. Mannas, M. Richardson, TSI TBD, S. Lauver, P. Student, and H. Cunningham.

At the October 2004 meeting, D. Mullins discussed the current proposal. K. Warner noted that the definition of car owner is in conflict with J. Rader's docket T90.20.1. J. Rader noted DOT's definition of "owner". Task Force for this docket was augmented to include T. Gaines, J. Hays, J. Bart, J. Bolds, K. Cook and an AllTranstek employee TBD.

Via e-mail dated 10/27/04, T. Wallis was added to the task force, representing TSI.

At the April 2005 meeting, D. Mullins reported on the current proposal. The task force has majority support for approval of the proposal as drafted. The scope of the proposal has been limited to defects or work that would require an R-1, R-2 or 4-2 reporting. Discovered defects would still require filing a report. K. Warner noted that API has provided a definition of owner that is not noted in the proposal. The Clay producers wish to be recorded as agreeing with API. L. Hopper commented that this proposal may not accomplish the intended objective because of difficulties that shippers and receivers encounter at the loading and unloading facilities. The Tank Car Committee noted that an AAR requirement would have little effect on parties who are not subject to the interchange rules. It was agreed that Federal requirements would be more effective. The proposal was returned to the task force to develop a petition for rulemaking.

At the July 2005 meeting, this docket was C.O.D. for task force work.

At the October 2005 meeting, the committee discussed the root issues of this docket. B. Schoonover offered to publish a safety advisory from FRA, advising the tank car community of individual responsibilities. It was suggested that the R-1 instructions be rewritten to allow only the car owner to file R-1's as a means of encouraging owner involvement.

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Consider Responsibilities of Parties in Tank Car Maintenance

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At the January 2006 meeting, John Swezey reported that there has been no task force activity on this docket. T. Phemister to talk to W. Schoonover about publishing the requested FRA notice.

At the April 2006 meeting, it was noted that CGSB 43.147 includes a paragraph on owner responsibilities. D. Mullins will work with FRA on a proposed Safety Advisory.

At the July 2006 meeting, D. Mullins reported that he is in discussions with FRA on an appropriate location in the CFR for this proposal.

At the October 2006 meeting, D. Mullins reported that he is continuing to work with FRA to complete this.

At the January 2007 meeting, J. Swezey will ask D. Mullins to have an update available for the April 2007 meeting.

At the April 2007 meeting, D. Mullins distributed a proposed change to 49 CFR to the working group which would address the issue. The FRA representatives indicated that a request should come as a petition from the TCC to DOT, which would then be reviewed for possible inclusion in 49 CFR. B. Fronczak asked if record retention could be addressed as part of this activity. This docket is COD for further work.

At the July 2007 meeting, J. Sbragia reported that D. Mullins is in discussions with TC and DOT on this proposal.

At the October 2007 meeting, D. Mullins reported that input from the CGSB meeting will be incorporated into the request to DOT.

At the July 2008 meeting, P. Student noted that the owners of cars are required to update the owner marks in UMLER. The current issue is that consist maintenance advisories go to the mechanical department while the cars are being handled by transportation so cars on advisories don't get stopped when they get to a yard. There also seems to be a lack of communication of changes to the owners mark when cars are sold. DOT offered that if the cars involved with the maintenance advisory were sent to FRA (Tom Phemister) they can also help to insure they are routed to a destination for required MA's. UP is currently working on software programs to let car owners be notified when inspection and qualification dates are coming due so the cars can be shopped. **COD**

At the October 2008 meeting, A motion was made to place docket in suspense, it was seconded and passed.

At the April 2010 meeting, D. Mullins requested that docket T88.5.2 titled "Consider Responsibilities of Parties in Tank Car Maintenance". TCC agreed to re-open this docket.

At the July 2010 meeting, J. Sbragia discussed that the TF plans to meet before the October TCC meeting. C. Crisafulli and T. Manrique will be added to the TF. The docket will be COD pending TF work.

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Consider Responsibilities of Parties in Tank Car Maintenance

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At the October 2010 meeting, D. Mullins reported that this docket was pulled out of suspense to review the responsibilities of parties involved with the modifications, conversions, alterations, and heavy repairs to tank cars. Anyone interested in participating on this task force shall contact Doug Mullins at [douglas.mullins@gatx.com](mailto:douglas.mullins@gatx.com)

At the January 2011 meeting, K. Dorsey reported that the docket was pulled out of suspense to review the responsibilities of parties involved with maintenance on tank cars. TF is developing a proposal for consideration.

At the April 2011 meeting, D. Mullins provided a handout on proposed changes to Chapter 1 of MSRP Section C-III M-1002. Doug discussed the responsibilities of parties involved in tank car maintenance. This proposal, in its 12 revision, includes builder and manufacturer responsibilities, owner responsibilities, tank car facility responsibilities, and offeror responsibilities. The definition of tank car facility was also discussed under the proposal for Appendix B. Comments on this proposal should be sent to K. Dorsey and D. Mullins. The comments will be collected and discussed by AAR and the TF before the next TCC meeting.

At the July 2011 meeting, K. Dorsey stated that the TF should have a proposal by the October TCC meeting. COD

At the October 2011 meeting, D. Mullins stated that this docket deals with the management of alterations, conversions, and modifications to tank cars. TF presented a two part proposal. First proposal removes words from M-1002 Appendix U and adds them to Chapter 1. The second proposal includes a petition to FRA to change 49 CFR part 179 and part 180 to work with what is proposed under Chapter 1. The action required on the second proposal is up in the air right now. A motion was made, seconded, and approved to move the first proposal to the executive TCC.

At the January 2012 meeting, COD awaiting proposal.

At the April 2012 meeting, D. Mullins discussed the proposal provided in the docket. S. Murray agreed to provide Mr. Mullins with comments on the proposal. K. Alexy stated that HM-216B should address some of the comments provided. J. Sbragia stated that according to the regulations the car owner has the sole responsibility for the maintenance of their tank car. A motion was made to move the proposal to the executive TCC for consideration, but the motion was not seconded and thus will remain open until PHMSA published final rulemaking HM-216B to see how this might affect the language within the proposal.

The following individuals will be added to the TF: Mike Dudar and Dan Welch



**T88.5.2 Responsibilities**

**Presented to Tank Car Committee, April 21, 2011, Atlanta  
(Revision 12A – Minor editorial changes Feb.27, 2012)**

**Chapter 1 Proposal**

The following definitions would be added or revised:

**1.2.2 Definitions**

Coatings and Linings	Means an interior protective coating or lining as defined in Appendix L of this manual.
Owner, Coating / Lining	The party responsible for the maintenance of a coating or lining. See Appendices D and L of this specification.
Owner, Service Equipment	The party responsible for the maintenance of service equipment. See Appendix D of this specification.
Owner, Tank Car	The company identified in UMLER in the “Owners Mark” field.
<u>Person</u>	<u>Individual, corporation, company association, firm, partnership or other legal entity.</u>
Tank Car Facility	See 49 CFR 179.2(a)(10) and CGSB 43-147 paragraph 3, and Appendix B of this specification.

The following would be added:

**1.3.18 Responsibilities**

This paragraph describes the responsibilities of builders, manufacturers, owners, offerors and tank car facilities for activities associated with alteration, conversion, repair (*i.e.*, covered by Appendix R), or qualification of tank car tanks and their connections, safety systems, insulation systems, metal jackets, service equipment, and interior coatings and linings. Any person who performs any function affecting the alteration, conversion, repair, or qualification of such equipment must do so in accordance with federal regulations, ~~industry~~ AAR standards, and with the owner’s authorization and ~~approved~~ owner’s written instruction. The responsibilities described in this paragraph are not all inclusive.

1.3.18.1 Builder and Manufacturer Responsibilities. Tank car builders, service equipment manufacturers, and interior coating and lining manufacturers are responsible for assisting car owners in the development of written instructions governing qualification for new equipment, and for identification of fatigue-critical locations, and assisting in the resolution of design-related or manufacturing-related service failures for existing equipment.

1.3.18.2 Owner Responsibilities. The owner of a tank car tank, safety system, service equipment, or an internal coating or lining is responsible for developing written instructions for the alteration, conversion, repair, and qualification of such equipment, and for providing each tank car facility, ~~approved~~ authorized by the owner, those written instructions. The owner is responsible for the collection and analysis of accurate inspection and test records, and to change the written instructions or inspection and test intervals to ensure for the continuing qualification of the equipment.

An owner may contract with another person to perform one or more of its maintenance functions as defined in 1.3.18; however, this does not relieve the owner from its responsibility to ensure for the continuing qualification of the equipment.

For additional requirements and recommended practices, see 49 CFR 180.509, CGSB 43.147, DOT SP 12095, and Appendices B and U of this specification.

**1.3.18.3 Responsibilities of Tank Car Facility.** A tank car facility must obtain the permission of the equipment owner before performing work affecting alteration, conversion, repair, or qualification of the owner's equipment. For the purposes of qualification and maintenance, the tank car facility must use the written instructions furnished by the owner or have written confirmation from the owner allowing the use of written instructions furnished by another. A tank car facility must not use, copy, distribute, forward, or provide to another person the owner's confidential and proprietary written instructions, procedures, manuals, and records without the owner's permission. A tank car facility must report all work performed to the owner. The tank car facility must also report observed damage, deterioration, failed components, or non-compliant parts to the owner.

**1.3.18.4 Responsibilities of an Offeror** (*i.e.*, persons who "offer" tank cars into transportation, such as a loading or unloading facility). An offeror of a tank car must obtain the permission of the equipment owner before performing work that results in an alteration, conversion, or repair to the equipment. The offeror must obtain the equipment owner's permission before performing or arranging for another party to perform such work.

In performing such work, by definition, the offeror becomes a tank car facility under federal and industry standards and rules. The offeror is then subject to the federal regulations and the industry standards and rules, including the facility registration and certification requirements and the quality assurance program requirements as defined at 49 CFR Part 179.7, CGSB 43.147 paragraph 5, and Appendix B of this specification.

An offeror must report all observed damage, deterioration, failed components, or non-compliant parts to the owner.

## **APPENDIX B**

### **CERTIFICATION AND REGISTRATION OF FACILITIES**

The task force recommends a change to the definition of "facility, tank car" in Appendix B.

#### **Current Appendix B:**

Facility, tank car. An entity that manufactures, repairs, inspects, tests, qualifies, maintains, alters, or converts a tank car, ensuring that the tank car conforms to published rules, regulations, and specifications.

#### **Proposed:**

Facility, tank car. Tank car facility means an entity that manufactures, repairs, inspects, tests, qualifies, maintains, alters the certificate of construction, ensures the continuing qualification of a tank car by performing a function prescribed in 49 CFR 179 or 180, CGSB 43-147 Parts II and III, or this specification, or that makes any representation indicating compliance with one or more of the requirements of 49 CFR 179 or 180, CGSB 43-147 Parts II and III, or this specification. Such activities must ensure that the tank car conforms to 49 CFR 179 or 180, CGSB 43-147 Parts II and III, and this

specification. The definition of tank car facility does not apply to offerors for the removal and reapplication of closures designed for the sole purpose of loading or unloading the lading (*e.g.*, blind flanges, pipe plugs, quick-disconnects).

#### **Appendix U – Remove 1.4. and 1.5**

If the changes to Chapter 1 are approved, the corresponding paragraphs in Appendix U would be removed (*i.e.*, U-1.4 Responsibilities and 1.5 Use of Contract Tank Car Facilities).

#### **New Recommendations For M-1002**

1. The task force recommends that the Tank Car Committee consider moving each definition in the *Specifications for Tank Cars* to Chapter 1. The Tank Car Committee should appoint an editorial task force to ensure that the words used in the definitions are prevalent and provide a contemporary sense of meaning. The task force will also ensure that the use of each definition throughout the *Specifications for Tank Cars* is consistently applied. Each Chapter and Appendix would state that definitions in 1.1.2 apply.

Some caution is needed in reviewing the relocation of definitions. If terms not currently defined in Chapter 1 are used in some unique way elsewhere in M-1002, definitions or associated text may need adjusting before such a move.

#### **Rulemaking**

The task force recommends that the Tank Car Committee consider a petition for rulemaking to revise the following definitions and paragraphs in the federal regulations.

*First petition for rulemaking:*

Exclude certain functions performed by offerors from the tank car facility definition. See SP-12095, paragraph 180.509 (j). The petition would also seek to clarify the tank car facility definition by separating the types of work from the motive of ensuring qualification.

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Consider Responsibilities of Parties in Tank Car Maintenance

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**Current:**

§179.2 Definitions and abbreviations.

(a)(10) Tank car facility means an entity that manufactures, repairs, inspects, tests, qualifies, or maintains a tank car to ensure that the tank car conforms to this part and subpart F of part 180 of this subchapter, that alters the certificate of construction of the tank car, that ensures the continuing qualification of a tank car by performing a function prescribed in parts 179 or 180 of this subchapter, or that makes any representation indicating compliance with one or more of the requirements of parts 179 or 180 of this subchapter.

**Proposed:**

§179.2 Definitions and abbreviations.

(a)(10) Tank car facility means an entity that manufactures, repairs, inspects, tests, qualifies, maintains, alters the certificate of construction, ensures the continuing qualification of a tank car by performing a function prescribed in parts 179 or 180 of this subchapter, or that makes any representation indicating compliance with one or more of the requirements of parts 179 or 180 of this subchapter. Such activities must ensure that the tank car conforms to this part and subpart F of part 180 of this subchapter. The definition of tank car facility does not apply to offerrors for the removal and reapplication of closures designed for the sole purpose of loading or unloading the lading (*e.g.*, blind flanges, pipe plugs, quick-disconnects).

**Petition TC for a parallel definition.***Second Petition for rulemaking*

The task force recommends that the Tank Car Committee petition the Department of Transportation to revise 49 CFR 179.7 (d) to clarify that the owner will provide the written instructions to the tank car facility (As noted in the June 26, 1996 federal register).

At the July 2012 meeting, there is a proposal in the docket. Currently owners get cars back in condition that has not been approved, which leads to disagreements on the responsible party and regulatory issues. Traceability is difficult due to the number of parties touching tank cars. The shipper groups generally can't inspect cars and so can't determine the maintenance status. The shipper groups feel that it is unreasonable to expect the users of the cars to be the police force. The proposal will be sent back to the TF to see how it meshes with HM216B.

At the October 2012 meeting, D. Mullins stated that comments were received from the ACC that the TF would have to address. He noted that M-216B addressed some of the comments.

At the January 2013 meeting, HM-216B was to address some of these TF efforts. COD

Consider Responsibilities of Parties in Tank Car Maintenance

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TASK FORCE: D. Mullins (Chairman), M. Richardson, J. Rader, R. Jachim, C. Crisafulli, T. Manrique, L. Strouse, M. Dudar, D. Welch

TF CHARGE: Review Proposal and Make Recommendations

REFERENCES: K. Warner 6/11/04, 4/14/05X2; D. Mullins 6/03/04, 3/29/05, 3/30/05, 4/15/05, 4/12/07, 4/19/07 (handout); T. Dalrymple 6/11/04; P. Kinnecom 6/09/04, 7/13/04, 2/03/05; M. Richardson 7/16/04; M Connolly 7/13/04; H. Weber 10/27/04; B Lavender 3/30/05; J Rader 4/14/05

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Pressure Relief Valve Inspection Intervals

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**Recent Activity:**

At the January 2013 meeting, FRA is working on this effort by sending valves to different testing facilities to see how they perform in an in service condition.

This docket was opened to discuss TFI recommendation of a five year inspection interval on pressure relief valves for cars transporting Anhydrous Ammonia.

Background: This docket was opened after T200.103-99 "Pressure Relief Valve In-service Performance" was RFD in October 2010. The following information pertains to this docket being opened.

Received via e-mail dated 3/23/10

The Fertilizer Institute (TFI), on behalf of its members who ship anhydrous ammonia by rail tank car, submits the following recommendations to the Tank Car Committee in the open docket T200.103.99 regarding safety valve testing. TFI requests that these comments be considered at the upcoming Tank Car Committee meeting scheduled for April 20-22, in Kansas City, Mo.

- Safety valves should be tested and re-qualified on a five-year basis. The protocol established under T200.103.99 (attached) states that safety valves should be removed prior to steam cleaning and sent to the original equipment manufacturer or an approved facility that follows the original equipment manufacturers' instructions for maintenance and requalification.
- When possible, stainless steel parts should be used at the critical sealing areas of the valves; i.e. body and retainer cap for the O-rings. Typically, valve stems are already made of stainless steel and all stainless steel valves are preferable. Coated carbon steel springs (aluminized or epoxy) would be acceptable. Non-critical parts, such as the top guide, spring guide, follower, washers and nuts, could be made of carbon steel plated material. If all stainless steel valves are used, safety valves could be retested and re-qualified on a ten-year basis.
- If car owners choose to keep the existing carbon steel body valves in service, after a bench test and breakdown inspection and before reassembly, the valve body must be prepared and coated with either Teflon or 3 mils of epoxy paint. The rebuild will include a new stainless steel O-ring retainer cap with customer specified O-ring material. These valves would continue to be retested on a five-year basis.

Comment received 10/6/10

It was recommended that the five year maximum interval could be placed in M-1002. It may be that it might be placed in Appendix U3.3.3. This section of Appendix U is where the proof for intervals other than the prescribed one under CFR is to be documented. It seems that the TFI data supports a five year interval for NH<sub>3</sub> service and TFI is recommending such an interval. What if the section said that the interval had to be no more than five years? That would allow those that want to go at an interval of less than five years could document why they chose to do so as required by the U3.3.3. While this section was written for those that want to extend the Federal limit, it seems that it could be used for our purposes.

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Pressure Relief Valve Inspection Intervals (cont.)

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At the January 2011 meeting, K. Dorsey discussed the recommendation from TFI regarding safety valve testing. There are some concerns that there might be push back from those individuals that have made significant investments into AA valves. It was stated by a member of the TCC that Leonard Majors is reviewing what happens when there is a change in the start to discharge pressure in AFFTAC. What might be more appropriate is a petition for rulemaking to PHMSA. TCC agreed to form a TF and will seek participation during the April 2011 TCC meeting.

Staff Note: Add D. Maechling to the TF

At the April 2011 meeting, the following individuals were added to the TF: C. Crisafulli, R. Jachim, Gov (TBD), and B. Jakubowski

At the July 2011 meeting, K. Dorsey stated that Transport Canada Amendment 9 requires a 5 year inspection interval. Anhydrous Ammonia car requires 5 year inspection interval for cars operating in Canada. One option is to mandate 5 year unless one can demonstrate a longer interval is justified. AAR will pass this option to the TF for consideration.

At the October 2011 meeting, L. Loman stated that there has been no activity on this docket.

At the January 2012 meeting, COD pending TF work. C. West Freeman will be added to the TF.

At the April 2012 meeting, L. Loman stated that the TF plans to have a proposal by the October TCC meeting.

At the July 2012 meeting, the TF will have a proposal for the October 2012. There is a need to refine the data to determine where this needs to go. The tolerance intervals were too wide the first time. K. Dorsey will contact L. Loman.

At the October 2012 meeting, L. Loman summarized the activities of the TF. The selection of the material has to be evaluated by the car owner which leads to the inspection intervals.

At the January 2013 meeting, FRA is working on this effort by sending valves to different testing facilities to see how they perform in an in service condition.

CURRENT TF: L. Loman (Chair), D. Maechling, C. Crisafulli, R. Jachim, Gov (TBD), B. Jakubowski, K. Alexy, K. Hoang, C. West Freeman

TF CHARGE:

REFERENCES: P. Guffain, 3/23/10;

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Review Definition of Tank Car Tank and Fittings

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**Recent Activity:**

At the January 2013 meeting, P. Student provided the TF proposal via PowerPoint.

*A motion was made, seconded, and passed on the provided proposal.* This work will not be published for comment via a CPC until the Appendix W TF addresses Post Weld Heat Treat (PWHT) requirements.

This docket was opened to review the definition of tank. This definition is to be used throughout M-1002. The definitions used in the various federal regulations governing tank car tanks are to be considered when conducting this review.

The T91.22 task force originally charged with determining the definition of a tank could not come to consensus and therefore asked that the TCC reassign this to a different task force. One of the main issues is whether or not to include the nozzle as part of the definition of a tank. There are two options, option one is to make the nozzle a part of the tank and the second option is to require the nozzle to tank welds be NDT inspected. It was noted that Transport Canada includes the nozzle as part of the tank. It was noted that DOT does not include the nozzle as part of the tank. Should post weld heat treatment and NDT inspections be required on nozzle to tank welds? AAR will review how changing the definition of a tank impacts the rest of the requirements within M-1002. Attachment welds, structure welds, and pressure retaining welds are all different when talking about the welds.

At the January 2012 meeting, the railroads are of the opinion that nozzles should be added to the definition of tank car tank. The basic thought behind this opinion is that anything welded to the tank requires post weld heat treatment (PWHT) and since the nozzle is welded directly to the tank it would make sense to include it under the definition of tank car tank.

TF Charge: To review the definition of tank car tank and fittings

TF Members: Chris Crisafulli, Chris Edmonds, Dave Ronzani, Pat Student, JP Gagnon, Glenn Sandheinrich

At the April 2012 meeting, K. Dorsey discussed the background on this docket and stated that the way the definition of a tank car tank could be viewed is that any items bolted to the tank are not a part of the tank and therefore would not be included in the definition of the tank car tank. However any items welded to the tank that receives direct pressure could be included as part of the definition of the tank.

The following individuals will be added to the TF: P. Student (TF Chair) and L. Loman

At the July 2012 meeting, P. Student reported on TF teleconference. Notes were distributed to the TCC. Define tank car tank shell heads nozzles and all component to contain the lading. Added many other appurtenances. Which welds are welds that contain the lading and which do not see lading. Attachments welds were also discussed. Rule goes into effect July 25th. TF wants concurrence from the TCC on direction. Welds are being eliminated requiring further inspection. Attachments weld inspections would still have the same requirements which are in effect today. There will be a difference in the way partial penetration weld is handled than a full penetration weld.



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Review Definition of Tank Car Tank and Fittings

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The welds for the reinforcing pads would be included in the definition. Two things discussed yesterday. Another question was about valves due dates depending on when they were applied to the car. The TCC did confirm the need to progress the definition. We have a week to start implementing the new definition. RSI will send a letter to PHMSA. It was distributed to the TCC during a break.

At the October 2012 meeting, a motion was made, seconded, and passed to move the TF proposal to TCC for consideration.

At the January 2013 meeting, P. Student provided the TF proposal via PowerPoint.

A motion was made, seconded, and passed on the provided proposal. This work will not be published for comment via a CPC until the Appendix W TF addresses Post Weld Heat Treat (PWHT) requirements.

CURRENT TF: P. Student (Chair), L. Loman, C. Crisafulli, C. Edmonds, D. Ronzani, P. Student, JP Gagnon, G. Sandheinrich

TF CHARGE: To review the definition of tank car tank and fittings

REFERENCES:

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Review of the Facility Registration and Certification Process

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**Recent Activity:**

At the January 2013 meeting, K. Dorsey discussed the letter from Bob Lauby, Deputy Associate Administrator for Regulatory and Legislative Operations of FRA to Ken Dorsey supporting the activities of the TF. This letter was handed out at the meeting. The plan is to proceed to move registered facilities to certified facilities. A facility would have to petition DOT-PHMSA to approve an alternative program. There are a lot of FG&L facilities that like this concept because it levels the playing field. Will target end of year for new language in M-1002 and target Jan 1, 2014 to initiate program.

The TF charge will need to be amended to include the implementation date of January 1, 2014.

This docket was opened to review the facility registration and certification process. Concerns have been raised that the current certification process may not be achieving the level of oversight the committee desires. As a specific example, recent issues with both registered and certified facilities not getting their paperwork into AAR on time and when this happens it frustrates everyone involved. TCC is seeking participation on this TF.

At the April 2011 meeting, the following individuals were added to the TF: L. Strouse, A. Shaffer, P. Draper, R. Johnson, J. Bolds, R. Keltz, D. Ronzani, and M. Forister

At the July 2011 meeting, K. Dorsey stated that AAR and FRA recently had a meeting on what the differences are between the inspections performed by AAR inspections versus FRA inspections. Some of the differences between the two types of audits are:

1. FRA does not have a predefined list of criteria to inspect cut the BOE uses predetermined check sheets.
2. FRA performs audits at registered facilities. The BOE inspectors currently do not perform audits on registered facilities unless requested.
3. While the BOE are at the facility some items are discussed and included in the notes of the report, but these items are not left with the facility. The BOE will address this and will start documenting all items and debriefing the facility before departing.

FRA agreed to furnish information on what DOT would like to see included in facility audits.

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Review of the Facility Registration and Certification Process

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The following items need to be considered by this TF:

1. Certified Facilities:
  - a. Right now the TCC only reviews the technical audits, should the TCC be reviewing both the technical audit and QA audit paperwork for certified facilities? This should be reviewed by the TF.
  - b. What should be done if a facility has been certified, but has not performed welding in years? Should these facilities be conditional?
  - c. What requirements could be adjusted during the re-certification process if welding hasn't been performed in years?
  - d. New processes not already approved under current certification, would it require a new technical inspection and/or QA inspection?
  - e. Extensions – should be reviewed to possibly include a requirement/statement that the QA manager of the home shop has supervisor responsibilities over these units.
  
2. Registered Facilities:
  - a. A complete review of the registration process. While big companies overall comply the smaller companies don't even have a QA program.

At the October 2011 meeting, K. Warner reported that the TF plans to meet face-to-face in November tentatively in Chicago, IL. Motion made, seconded, and approved to combine T91.2.1 and T91.12-90 with the understanding that AAR would create a separate docket for BOE inspection reports.

Below is the information transferred from T91.12-90 Inspection for Certification of Facilities that pertain to the work of this docket.

*At the January 2011 meeting, K. Dorsey discussed the recent issues with both registered and certified facilities not getting their paperwork into AAR on time. When this happens it frustrates everyone involved with the registered and certified process. Motion made, seconded, and passed to open a docket to review the certified and registered facility process. TCC agreed to form a TF and will seek participation during the April 2011 TCC meeting.*

*At the April 2011 meeting, A. Ciccarelli reported that P. Draper is the new chief BOE inspector. A. Maty signed a contract with the AAR to continue the efforts with the balloting process of AAR certified facilities to complete a smooth transition to Paul. There have been a total of 17 AAR facility certification activities so far this year. In 2009 the BOE began supporting the Security Emergency Response Training Center in Pueblo, Colorado. Four BOE inspectors are assigned to participate in SERTC training for a total of 14 weeks in 2011. In 2011 all tank car QA's were assigned to BOE inspectors. The BOE inspectors continue to actively participate in the NAR program. There is still a BOE inspector position vacancy in the Chicago region.*

*At the July 2011 meeting, P. Draper stated that there is an open BOE Inspector position in District 6. Paul stated that to date a total of 36 annual tank car inspections and evaluations have been completed. BOE Inspectors plan to continue their assistance in training at SERTC. Larry Strouse (FRA) had asked Paul if the BOE had performed any facility registration inspections this year. Paul responded that there can be if there is a request to do so.*

*At the October 2011 meeting, K. Warner reported that the TF plans to meet face-to-face in November tentatively in Chicago, IL. Motion made, seconded, and approved to combine T91.2.1 and T91.12-90 with the understanding that AAR would create a separate docket for BOE inspection reports.*

*T91.12-90 was discussed by K. Warner. References include PG Kinnecom 6/16/04 (CPC-1162); A Maty 1/28/04, 4/22/05, 10/2/06*

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Review of the Facility Registration and Certification Process

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At the October 2011 meeting, K. Warner reported that the TF plans to meet face-to-face in November tentatively in Chicago, IL. Motion made, seconded, and approved to combine T91.2.1 and T91.12-90 with the understanding that AAR would create a separate docket for BOE inspection reports.

At the January 2012 meeting, K. Warner reported on this TF's recent meetings/activities. Kirk requested guidance/direction from the TCC on the following TF questions during the meeting:

1. This TF seeks direction from the TCC on whether or not registered facilities should follow similar requirements as certified facilities in regard to the requirements outlined in M-1003. Specifically limited to those elements listed in M-1003 that apply.

TCC RESPONSE: Yes, Registered facilities should follow similar requirements as certified facilities and therefore should follow those elements in M-1003 that apply.

2. This TF seeks direction from the TCC on what oversight is desired on facility extensions in regard to QC. Would personnel performing the work as an extension facility have the ability to sign off on their own work if qualified to do so.

TCC RESPONSE: TF is to develop and administer a survey that would be sent to mobile and extension facilities verifying oversight as specified in the companies QA program. Right now there is no clear answer on an individual signing off their own work if you are qualified to do so. One option to consider is to add an element in the QA audit that would verify that the QA manager has oversight over the mobile and extension units.

TCC RESPONSE: The terms mobile unit and extensions need to be better defined. Perhaps they could be replaced with the term non-co-located.

3. This TF seeks direction from the TCC on what work should be allowed under conditional certification versus that work for unconditional certification.

TCC RESPONSE: TCC recommended that the TF identify the exact work that each shop performs, review the need for the current conditional process, and determine if the terms conditional and unconditional need to be re-defined based on the TF's review.

TCC RESPONSE: TCC wants AAR to investigate the possibility to post real time all active registered and certified tank car facilities on-line. This would replace the process used today of quarterly CPC's. If this were to be done the M-1002 would have to be modified accordingly.

4. This TF seeks direction from the TCC on AAR's ability to facilitate a new registration process. This process would include an initial and re-registration inspection on registered facilities as well as the management of the suggested internal annual audits that would be sent to AAR for review.

TCC RESPONSE: TCC request that AAR/TTCI evaluate and develop a business proposal on AAR's ability to facilitate the registration process.

**T91.2.1 TF 4 Proposals agreed by TF on March 22, 2012:**

**Proposal # 1:**

TF proposes that AAR Class F, G, and L Tank Car Facilities will be required to have both:

- Quality Assurance Program M-1003
- Technical M-1002

NOTE: IF the proposal above is approved and adopted the term “registered” will be replaced with “certified”

**Proposal #2:**

TF Proposes New Definition for Mobile Unit and Revised Definition for Extension

Addition to Appendix B, Table B1 General Definitions of M-1002

**Mobile unit:** a certified tank car facility that is capable of traveling and operates under a unique station stencil.

Modification to Existing definition to Appendix B, Table B1 General Definitions of M-1002

**Extension:** *Must be* a mobile unit under the direction and control of a certified facility. The extension shall be permitted to perform all work that the parent facility is certified to perform, provided that the employees are properly trained, certified, and equipped to perform such work. Extensions are permitted from AAR Class A, B, and C certified facilities, but are limited to Class C work only.

*NOTE: Only added the words “Must be” to existing definition of extension.*

**Proposal #3:**

- TF proposes New Repair Level Capability Table for Certified Facilities
- TF proposes Redefining Unconditional and Conditional status of Certified Tank Car Facilities by adding new language based on repair level capabilities and redefining the terms “first tank car work in process”

The TF agrees that the approval process for certified tank car facilities should be based on weld capabilities. Today it is based on “first tank car work in process”

The term “first tank car work in process” is ambiguous. Some feel that the term refers to any through wall repair to a tank car tank. Some feel that the term refers to an insert to the tank car tank. The TF agreed that the term “first tank car work in process” should be replaced with something more explicit, so the TF agreed to develop a repair level capability table.

Due to the criticality of weld work on a tank car tank the TF agrees that a tank car facility should be required to demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive and post weld heat treat requirements in order to become fully certified.

The repair level capabilities will be identified on the certification paperwork and in future listings of approved facilities.

The following Table is being proposed:

Table B(TBD): Repair Levels for Certified Tank Car Facilities

Level	Description
RL1	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level excludes an insert.
RL2	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level includes an insert.

*NOTE: The TF in the near future will also address, based on decisions made with the proposals within, what minimum requirements are needed to remain certified and if not met will be de-certified.*

During the initial certification of a Class A, B, C, and D facility the facility would be able to perform tank car tank work (not including welding to the tank) as described by the class of certification for a 12 month period. In order for the facility to be granted a 6 year M-1002 certification the facility will have to demonstrate at a minimum repair level “RL1” within the initial 12 month period and have a BOE inspection validate that ability. If the tank car facility does not obtain a minimum repair level RL1 within the initial 12 months the tank car facility certification proceedings must be reinitiated. The repair level will be validated during each annual evaluation. If the facility doesn’t maintain at a minimum repair level RL1 even after the initial 12 month period the facility will lose their certification and will have to re-apply. If a facility during the initial 12 month period is approved for repair level RL2, they can remain at repair level RL2 as long as the facility can demonstrate at a minimum repair level RL1 during each annual evaluation.

**T91.2.1 TF 4 Proposals agreed by TF on May 31, 2012 Request approval by TCC at July 2012 TCC meeting:**

**Revised Proposal #1:**

Underline = adds to original proposed language  
 Strikethrough = deletions of original proposed language

**TF seeks TCC approval of the following proposal:**

AAR Class F, G, and L Tank Car Facilities would be required to have QA certification as outlined within AAR MSRP Section J Quality Assurance Program M-1003 and be required to have Technical certification in accordance with AAR MSRP Section C Part III M-1002.

Outlined below is the proposed new AAR oversight for Class F, G, and L Tank Car Facilities

<b>Class F, G, and L Facilities</b>
<b>M-1003 QA Certification: (3 year certification cycle)</b>
Certification Audit (example 2010) – review all <u>24</u> M-1003 elements
Year 1 (2011) – (First) Compliance Audit – review 6 to 8 elements
Year 2 (2012) – (Second) Compliance Audit – review 6 to 8 elements
Year 3 (2013) – Recertification Audit – review all <u>24</u> M-1003 elements
Year 4 (2014) – (First) Compliance Audit – review 6 to 8 elements
Year 5 (2015) – (Second) Compliance Audit – review 6 to 8 elements
Year 6 (2016) – Recertification Audit – review all <u>24</u> M-1003 elements
<b>M-1002 C-III Technical Certification for Class F, G, and L: (6 year certification cycle)</b>
Certification Inspection (Form TDB) (2010)
Years 1 & 2 (2011, 2012) – <del>Annual Internal Audit performed by the facility addressing all technical elements that apply. It would be sent to AAR for review</del> <u>The BOE Auditor will verify that the facility has completed the requirements set forth within the supplemental checklist during the annual QA M-1003 audit</u>
Year 3 (2013) – Compliance Audit
Years 4 & 5 (2014, 2015) – <del>Annual Internal Audit performed by the facility addressing all technical elements that apply. It would be sent to AAR for review</del> <u>The BOE Auditor will verify that the facility has completed the requirements set forth within the supplemental checklist during the annual QA M-1003 audit</u>
Year 6 (2016) – Recertification with Inspection (Form TBD)

*NOTE: The current process for Technical Certification for Class A, B, C, and D facilities would remain unchanged.*

*Note: TF is working on the technical certification elements for Class F, G, and L tank car facilities.*

**Revised Proposal #2:**

**STATUS:** TF withdraws from its original proposal #2 on March 22, 2012 the proposed new term mobile unit; however the term extension is still under TF review.

**Background:** The term mobile unit is currently not defined within M-1002. The reason for removing the term mobile unit from proposal #2 is because it is not relevant to the tank car facility extension relationship. It is a mode of operation not a quality management relationship.

Original proposal #2 prior to the April 19, 2012 T91.2.1 TF meeting was to define the term mobile unit and redefine the term extension. After the April 19, 2012 TF meeting it was decided that the term mobile unit should be removed from this proposal and that the term extension should not be redefined, instead it should be removed. No resolution has been made yet by the TF on the removal of term extension. TF continues its review of the term extension.

**Proposal #3:**

**TF seeks TCC approval of the following proposal:**

Create New Table B6 in Appendix B for Repair Level Capabilities for Class A, B, C, and D Certified Tank Car Facilities

Table B6: Repair Levels for Class A, B, C, and D Certified Tank Car Facilities

Level	Description
RL1	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level excludes an insert.
RL2	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level includes an insert.

**Background:**

*Define First Tank Work in process:* There were several views on what constitutes the first tank work in process. One TF member stated that it was any through wall (i.e. tank shell or tank head) repair to a tank car tank. Another TF member stated that it is an insert to the tank car tank. Another TF member stated that we should get away from the term “first tank work in process” and focus on the first weld work to a tank car tank. The TF agreed to move away from defining “first tank work in process” and redefine 5.3.1.6 to include a reference to a new table that would describe the minimum repair capabilities of certified facilities. Therefore the above proposed table B6 was agreed upon by the TF members.



**Revised Proposal #4:**

**TF seeks TCC approval of the following proposal:**

Revise the existing section 5.3.1.6 within the Approval of Application section of Appendix B to replace the process and terms of conditional to unconditional based on the ability to perform “first tank work in process” with a new requirement for Class A, B, C, and D facilities to demonstrate a minimum repair level capability as described in the proposed language below and in conjunction with the proposal #3.

Underline = adds to original proposed language

Strikethrough = deletions of original proposed language

**5.3.1.6** ~~During the initial certification of a Class A, B, C, and D facility the facility would be able to perform tank car tank work (not including welding to the tank) as described by the class of certification for a 12 month period.~~ In order for ~~the a~~ Class A, B, C, and D facility to be granted a 6 year M-1002 certification the facility will have to demonstrate at a minimum repair level “RL1” ~~within the initial 12 month period~~ and have a BOE ~~inspection~~ Inspector validate that ability at the time of technical inspection. ~~If the tank car facility does not obtain a minimum repair level RL1 within the initial 12 months the tank car facility certification proceedings must be reinitiated.~~ The repair level will be validated during each annual evaluation by a BOE Inspector. If the facility doesn’t maintain at a minimum repair level RL1 ~~even after the initial 12 month period~~ the the facility will lose their certification and will have to re-apply. If a facility ~~during the initial 12 month period~~ is approved for repair level RL2, they can remain at repair level RL2 as long as the facility can demonstrate at a minimum repair level RL1 during each annual evaluation.

*NOTE:* If proposal #3 and revised proposal #4 were approved by the TCC then the process and terms of conditional and unconditional will no longer exist due to the implementation of a new table B6 to identify repair capability levels. A certified Class A, B, C, and D tank car facilities cannot begin work until they are approved by the AAR Tank Car Committee. Once approved by AAR the facility will receive a certification letter from AAR and the facility will be identified in the approved list of certified tank car facilities. The information that will be provided in the list of certified facilities are as follows: Facility/Company Name, City and State, Station Stencil, Repair Level Capability (RL1 or RL2), Expiration Date of Certification, Material Group, and TC-128 capability.

At the April 2012 meeting, M. Forister provided a PowerPoint presentation over all the TF work. Included in the presentation were the four TF proposals which were also provide in the docket. Prior to the meeting AAR had made available to industry both the TF strawman and the TF presentation.

The following comments and responses were provided after the presentation:

1. K. Alexy (FRA): The definition of extension and mobile unit need to be worked on as it refers to the intent of the terms “direction and control” of a certified facility.
  - a. K. Dorsey stated that the intent is that if the QA manager can physically appear at an extension at any time, knowing where it is and what it is doing, then the facility could exercise direction and control.
2. M. Clark: Some registered facilities have certification under ASME and other certifying bodies. Do they need to be certified by AAR also?
  - a. K. Dorsey: Yes. There are precedents for this now, such as tank car manufacturers, who are ASME-certified but also must be AAR-certified.

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Review of the Facility Registration and Certification Process

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3. D. Fredbeck: Need to coordinate with QA Committee so that they understand the new requirements that they will now oversee, and to ensure that they know what resources will be required.
  - a. M. Forister: A plan is in place for the ramp-up of resources and staff. Task force is aware of this need. K. Dorsey explained why it makes sense to have the existing industry QA oversight people manage this and not AAR's tank car office.
4. R. Rowe: Those who comply now with current requirements are not the problem. Those who don't will not comply with this either. The facilities meeting the requirements today are being asked to bear higher costs even though they are not the ones who need to improve.
  - a. K. Dorsey: We recognize that the costs are important. The intent is not to put companies out of business.
5. A. Shaffer: Can repairs that are done to demonstrate RL1 and RL2 capability be done on something other than a car in service?
  - a. M Forister: Yes. The current process now for certified tank car facilities is currently that way so there doesn't seem to be a need to change the process for tank car facilities working tank car service equipment.
6. J. Bolds: Is it correct that F, G and L facilities will now be certified just like the rest of the classes, and will thus have an increase in the work they must do to qualify to operate?
  - a. M. Forister and K. Dorsey: Yes. Keep in mind that even though all elements have to be address the facility is only required to fill out those elements that pertain to their scope of work. The point is that they would clearly identify those that do apply and those elements that do not. The goal is that they not only supply the needed information but they understand those elements that do not pertain to them and why. Across the whole railroad industry, Class F, G, and L tank car facilities are the only ones that lie outside M-1003 quality assurance program.
7. J. Bolds: Does the definition of "mobile unit" prevent mobile units from having their own extensions?
  - a. K. Dorsey: No, once they are a certified facility they should be allowed to enjoy the benefits of that. M. Forister: But "extension" as written today in M-1002 are limited to A, B and C certified facilities performing only C work.
8. M. Clark: There could be confusion in the community about what parts of M-1003 will apply to each facility.
  - a. K. Dorsey: M. Forister has created an aid to understanding this and the task force is conscious of the need for clarity.

After discussion, TF chair K. Warner made a motion to move the four proposals to the executive TCC for consideration. The motion was seconded and passed for the executive TCC to consider during the July 2012 meeting. Ken noted that the next phase will include the development of an implementation plan.

**Proposal #1: M-1003 and M-1002 Certification for Class F, G, and L facilities**

**Approved by TF on September 12, 2012**

**TF seeks TCC approval during October 2012 meeting on the following proposal:**

AAR Class F, G, and L Tank Car Facilities would be required to have QA certification as outlined within AAR MSRP Section J Quality Assurance Program M-1003 and be required to have Technical certification in accordance with AAR MSRP Section C Part III M-1002.

Outlined below is the proposed new AAR oversight for Class F, G, and L Tank Car Facilities

<b>Class F, G, and L Facilities</b>
<b>M-1003 QA Certification: (3 year certification cycle)</b>
Certification Audit (example 2012) – review all 24 M-1003 elements
Year 1 (2013) – (First) Compliance Audit – review 6 to 8 elements
Year 2 (2014) – (Second) Compliance Audit – review 6 to 8 elements
Year 3 (2015) – Recertification Audit – review all 24 M-1003 elements
Year 4 (2016) – (First) Compliance Audit – review 6 to 8 elements
Year 5 (2017) – (Second) Compliance Audit – review 6 to 8 elements
Year 6 (2018) – Recertification Audit – review all 24 M-1003 elements
<b>M-1002 C-III Technical Certification for Class F, G, and L: (6 year certification cycle)</b>
Certification Inspection (Form TDB) (2012)
Years 1 & 2 (2013, 2014) – The BOE Auditor will verify that the facility has completed the requirements set forth within the supplemental checklist during the annual QA M-1003 audit
Year 3 (2015) – Compliance Audit
Years 4 & 5 (2016, 2017) – The BOE Auditor will verify that the facility has completed the requirements set forth within the supplemental checklist during the annual QA M-1003 audit
Year 6 (2018) – Recertification with Inspection (Form TBD)

*NOTE: The current process for Technical Certification for Class A, B, C, and D facilities would remain unchanged. TF is working on the technical certification elements for Class F, G, and L tank car facilities.*

**TF seeks TCC approval during October 2012 meeting on the following proposal:**

**Proposed Changes Key:**

Underline text = adds

Strikethrough text = remove

**Appendix B – Certification and Registration of Facilities**

~~3.3.4~~ — ~~An extension of a certified facility must have in its possession the tools, equipment, and documentation mandated by the Quality Assurance Program for the scope of work being performed.~~

3.3.5 Certified facility may operate mobile units as necessary but have to remain under the direction and control of the certified facility. Mobile units must be based and operate from the certified facility. The mobile unit shall be permitted to perform all work that the certified facility is certified to perform, provided that the employees are identified and function in accordance with the certified facility’s QAP. Mobile units are not permitted to manufacture or assemble tank car tanks.

3.3.5.1 The mobile unit(s) must be physically present at the time of audits and there must be objective evidence that the mobile unit is operating under the certified facility’s Quality Assurance Program.

3.3.5.2 If a mobile unit operates outside of paragraph 3.3.5 they must obtain independent certification.

**Table B1. General definitions**

~~Extension~~ — ~~A mobile unit under the direction and control of a certified facility. The extension shall be permitted to perform all work that the parent facility is certified to perform, provided that the employees are properly trained, certified, and equipped to perform such work. Extensions are permitted from AAR Class A, B, and C certified facilities, but are limited to Class C work only.~~

**Table B3. Facility classes requiring certification**

<b>Class</b>	<b>Description</b>
Class A:	Manufacture, repair, alter, convert, or qualify tank cars*
Class B:	Assemble, repair, alter, convert, or qualify tank cars*
Class C:	Repair, alter, convert, or qualify tank cars*
Class D:	Facilities that fabricate, repair, or qualify tank car tanks and/or pressure-retaining tank components that are moved to and from the facility without trucks (running gear).*
Class E:*	<del>Qualification of tank cars per 49 CFR 180.</del>
Class F:	<u>Manufacture, recondition, repair, retest, or qualify tank car service equipment.*</u>
Class G:	<u>Remove and replace tank car service equipment or change gaskets (except that the following operations do not require registration: replacing in-kind rupture disks, bottom outlet valve caps, nonpressure hinged manway gaskets and/or fill-hole cover gaskets, bottom outlet valve cap gaskets, magnetic gauging device rods, O-rings in gauging device caps, O-rings in thermometer well housing tubes, secondary plugs, chains, and flanges external to valves). Gaskets and O-rings must be compatible with lading.*</u>
Class L:	<u>Install, qualify, or repair interior linings and coatings in tank cars that transport materials that are corrosive to the tank as defined in Appendix L, paragraph 8.0.*</u>

\* Requires specific certification for this function by the Quality Assurance Committee

**Table B5. Information required for application for certification**

4. List of welders, by name and identification symbol, qualified per Appendix W and employed at the facility, ~~and its extensions~~. One or more welders qualified as defined in Appendix W for each material group for which certification is requested must be employed at the facility. One copy of Welder Performance Qualification Test, Appendix W, Fig. W14, is to be included for each material group for which certification is requested.
5. Organization charts of production and quality ~~control~~ ~~staffs, including extension personnel~~. Statement describing key personnel responsible for supervising production, repair, testing tanks, and ensuring quality in compliance with AAR standards, including the following:
  - a. Title
  - b. Outline of duties
  - c. Delegated authority
  - d. Level to which certified [for nondestructive testing (NDT), welding inspection, and coating/lining inspection]
  - e. Experience, education, and training
6. Statement that the facility ~~and all extensions~~ have a quality assurance program that will ensure compliance with all applicable requirements of this specification, related AAR rules and specifications, federal regulations, and individual responsibility for quality.
9. ~~Each certified facility will have a unique identifier added to the station stencil for each extension.~~ Each certified facility may request a unique identifier.

## Appendix W – Welding of Tank Car Tanks

### Table W1. General definitions

~~Extension As applied to tank cars, a static or mobile extremity capable of making limited repairs supported and controlled by an AAR-certified facility.~~

~~10.2.3.1 The certified facility shall be responsible for all welding. Use of subcontract welders by an extension is not permitted.~~

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### Proposal #3: Establish Repair Level Capabilities for M-1002 Certified Facilities

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Approved by TF on September 12, 2012

#### **TF seeks TCC approval during October 2012 meeting on the following proposal:**

Create New Table B6 in Appendix B for Repair Level Capabilities for Class A, B, C, and D Certified Tank Car Facilities

**Table B6: Repair Levels for Class A, B, C, and D Certified Tank Car Facilities**

Level	Description
RL0	Applies to Class D facilities only. Demonstrates Class D proficiencies except tank car tank qualification.
RL1	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level excludes an insert.
RL2	Demonstrate proficiency in performing the first weld to a tank car tank including all applicable non-destructive testing and post weld heat treat requirements. This level includes an insert.

**TF seeks TCC approval during October 2012 meeting on the following proposal:**

**Proposed Changes Key:**

Underline text = adds

Strikethrough text = remove

~~**Current 5.3.1.6** The initial certification of a facility is conditional. After receipt of conditional approval, the facility is required to advise the Director regarding the first tank work in process. A Form AAR 4-2, if required, must be submitted and approved prior to beginning the work. At the discretion of the Tank Car Committee, the first car is subject to inspection. Based upon that inspection, final action will be taken by the Committee to remove conditional status. The applicant will bear all costs for reinspection. Conditional certification will lapse, in the absence of shop activity on a tank car, at the end of a two-year period, after which time certification proceedings must be reinitiated. Facilities holding conditional approval will not be listed in published listings of certified facilities.~~

**New 5.3.1.6** In order for a Class A, B, and C facility to obtain certification by the AAR the facility will have to demonstrate, at a minimum, repair level RL1 and have an AAR inspector validate that ability at the time of technical inspection. The repair level will be validated during each annual evaluation by an AAR inspector. If the facility doesn't maintain, at a minimum, repair level RL1 the facility will lose their certification and will have to re-apply. If a facility is approved for repair level RL2, they can remain at repair level RL2 as long as the facility can demonstrate, at a minimum, repair level RL1 during each annual evaluation.

**5.3.1.7** In order for a Class D facility to obtain certification by the AAR the facility will have to demonstrate at a minimum repair level "RL0" for those facility's that do not perform qualification to tank car tanks.

**5.3.1.7.1** In order for a Class D facility to obtain certification by the AAR the facility will have to demonstrate at a minimum repair level "RL1" for those facility's that do perform qualification to tank car tanks.

### Review of the Facility Registration and Certification Process

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As this effort of oversight continues to improve over time one option that may be worthwhile investigating is to align the unique identifiers and commodity/functions performed by certified tank car facilities within M-1002 and M-1003. The purpose of this would ensure consistency of functions performed while provide direct relationship to the AAR non-conformance reporting process resulting in improved products and/or services related to tank car tanks and tank car components.

Presently, the M-1003 requires certification for products and/or services identified in Appendix A of M-1003. Each product and/or service is identified as a commodity. A commodity will have both a unique identifier and a description, for example:

A19 = Manufacturer of Tank Cars  
 B24 = Tank Car Repair Facility (Not including Class E)  
 C3 = Class E Tank Car Facility

Note: C3 needs to be removed from M-1003 and the language “(Not including Class E)” removed from commodity description B24.

Presently, the M-1002 requires certification for classes of tank car facilities. Each class has a unique identifier and description, for example:

<b>Class</b>	<b>Description</b>
Class A	Manufacture, repair, alter, convert, or qualify tank cars
Class B	Assemble, repair, alter, convert, or qualify tank cars
Class C	Repair, alter, convert, or qualify tank cars
Class D	Facilities that fabricate, repair, or qualify tank car tanks and/or pressure-retaining tank components that are moved to and from the facility without trucks (running gear).

The future idea is to harmonize between M-1003 and M-1002 by having one unique identifier and description for functions performed by tank car facilities, for example:

A19 = Manufacturer of Tank Cars  
 A24 = Assemble of Tank Cars  
 A25 = Fabrication of Tank Cars  
 B24 = Repair of Tank Cars  
 B78 = Alteration of Tank Cars  
 B79 = Conversion of Tank Cars  
 B80 = Qualification of Tank Cars  
 B81 = Fabrication of Pressure Retaining Components  
 B82 = Repair of Pressure Retaining Components  
 B83 = Qualification of Pressure Retaining Components  
 B84 = Manufacturer of Tank Car Service Equipment  
 B85 = Reconditioner of Tank Car Service Equipment  
 B86 = Repair of Tank Car Service Equipment  
 B87 = Retest of Tank Car Service Equipment  
 B88 = Qualification of Tank Car Service Equipment  
 B89 = Removal and Replacement of Tank Car Service Equipment (including changing of gaskets)



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Review of the Facility Registration and Certification Process

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B90 = Installation of Interior Linings and Coatings in Tank Cars \*

B91 = Qualification of Interior Linings and Coatings in Tank Cars \*

B92 = Repair of Interior Linings and Coatings in Tank Cars \*

\*Only applies to tank cars that transport materials that are corrosive to the tank as defined in Appendix L, paragraph 8.0.

Several TF members agreed that this would definitely be worthwhile looking into, but stated that the current effort should continue to be pursued.

At the October 2012 meeting, K. Warner and M. Forister on behalf of the T91.2.1 TF summarized the efforts of the TF. K. Warner explained the purpose of the TF and M. Forister provided the list of TF members and timeline of TF efforts. The T91.2.1 TF proposals 1, 2, 3, and 4 were provided in the docket. K. Warner also mentioned the Chlorine Institutes alternative proposal to T91.2.1 TF proposal number 1, which was submitted to AAR on Monday October 15, 2012. J. Bart from PPG provided the industry an overview of the Chlorine Institutes alternative proposal. After discussing the T91.2.1 TF proposals and the Chlorine Institutes alternative proposal to T91.2.1 TF proposal number 1 the TCC agreed that the comments provided during Sub 2 and the proposals 1, 2, 3, and 4 will be address and considered during the executive Tank Car Committee meeting.

\*At the October 2012 executive session, F. Reiner summarized the Chlorine Institute (CI) alternative proposal to T91.2.1 TF proposal number 1 which involves the requirement for Class F, G, and L facilities to obtain both an M-1003 QA certification and M-1002 technical certification. CI had provided their proposal to AAR on Monday October 15, 2012. The CI proposal states a different level of oversight and list of auditing requirements. CI recognized that there is an oversight issue with Class F, G, and L tank car facilities; however they feel that the existing registration elements are valid and meet the requirements of 49 CFR 179.7. Their alternative proposal does not include an annual audit. CI believes that alternative quality assurance programs should be acceptable and that an intermediate audit (one within the six year registration cycle) is sufficient.

T91.2.1 TF members reminded the group that a large amount of time was taken to make a comparison between the M-1002 registration requirements against the M-1003 quality assurance program elements and the 49 CFR 179.7 regulations. FRA expressed an expectation a compliant program would include annual audits. Based on the mapping effort (comparison of 179.7, M-1002, and M-1003) the TF identified deficiencies in the current Appendix B registration requirements and noted that the M-1003 meets not only 49 CFR 179.7 but also the direction set by FRA of annual audits.

A motion was made, seconded and passed on proposal 1 with the following results:

T91.2.1 TF Proposal # 1

5 No votes (The Sulphur Institute, Clay Producers Traffic Association, The Chlorine Institute, American Chemistry Council, The Fertilizer Institute)

T91.2.1 TF Proposal # 2, 3, and 4

The Tank Car Committee unanimous approved T91.2.1 TF proposals 2, 3, and 4

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Review of the Facility Registration and Certification Process

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At the January 2013 meeting, K. Dorsey discussed the letter from Bob Lauby, Deputy Associate Administrator for Regulatory and Legislative Operations of FRA to Ken Dorsey supporting the activities of the TF. This letter was handed out at the meeting. The plan is to proceed to move registered facilities to certified facilities. A facility would have to petition DOT-PHMSA to approve an alternative program. There are a lot of FG&L facilities that like this concept because it levels the playing field. Will target end of year for new language in M-1002 and target Jan 1, 2014 to initiate program.

The TF charge will need to be amended to include the implementation date of January 1, 2014.

CURRENT TF: K. Warner (Chair), R. Keltz, J. Moore, P. Draper, R. Johnson, J. Bolds, D. Ronzani, M. Forister, J. Byrne, B. Howard, R. Rowe, T. Muller, T. Delafosse, M. Dudar, K. Woloszyk, J. Riggs, J. Standish, S. Geneva

TF CHARGE: To review the AAR facility registration and certification process

REFERENCES: 10/2011 TCC agreed to combine T91.12-90 Inspection for Certification of Facilities with this docket.

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BOE Inspection Activities

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**Recent Activity:** See Below.

As of a result of activity taken during the October 2011 TCC meeting this docket was renamed from Inspections for Certification of Facilities to BOE Inspection Activities. In accord with stated policy, Tank Car Committee approval of personnel utilized to perform certification inspections of tank car facilities is required. Bureau of Explosives inspectors utilized to perform tank car facility certification inspections should also be certified as Quality Assurance inspectors and utilized to perform both certifications simultaneously. Under this docket BOE inspection activities will be reported by the chief inspector of the BOE or a representative from the Bureau of Explosives.

At the January 2012 meeting, P. Draper provided an update on the BOE Field Force changes for 2012. AAR/TTCI has determined that separating the QA activities from the BOE activities will have a positive impact on improving the BOE services. It was specifically noted that there will be no changes in the type of BOE field services offered.

At the April 2012 meeting, P. Draper reported on the recent BOE inspection activities. P. Draper stated that the BOE has seen Class F, G, and L facilities move toward Class C tank car facility certification.

At the July 2012 meeting, P. Draper reported that all the BOE inspectors now report to the Hazmat Compliance and Training Group (Mike Cook). All M-1003 audits of tank car facilities are performed by them as are the M-1002 technical certification inspections. There are 12 new facilities requesting M-1002 certification. Also Jorge Molino is doing the QA annual audits in Mexico and will be doing the technical audits when he is certified to do so. As a reminder a facility is obligated to send the renewal applications 6 months in advance of the renewal date. The NAR follow-ups of 230 incidents have been loaded into the NAR system.

At the October 2012 meeting, P. Draper stated that the BOE Field Force has recently conducted 10 technical inspections (5 re-certs and 5 initial certification). BOE continue to support the chemical plants by providing training. The BOE recently received a request for a Service Trial teardown. There are 8 technical certifications currently scheduled. When technical M-1002 applications are submitted they must be submitted to AAR Executive Director of Tank Car Safety. The BOE was recently asked to perform inspections at transload facilities.

At the January 2013 meeting, P. Draper reported on the following:

- 2012 Recap - 22 M-1002 Technical Inspections conducted (12 Initial Certifications and 10 Recertification's)
- New BOE Inspector has been selected and will be located in the Illinois area

2013 Projection in regards to M-1002 Certification/Recertification Technical Inspections

- 14 Tank car facilities' M-1002 Recertification expires in 2013
- 2 facilities have requested and submitted their M-1002 application for M-1002 Certification
- ST 433 & 434 - schedule is being put together in order to pull valves and conduct tear down inspection

BOE Inspection Activities

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CURRENT TF: P. Draper

CHARGE:

REFERENCES:

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Review Appendix B Paragraph 3.1.5 for Clarity

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**Recent Activity:**

At the January 2013 meeting, COD

This docket has been opened to review the wording of M-1002 Appendix B Paragraph 3.1.5 for clarity. In addition it has been asked the TF review the definition of tank car tank as it currently does not include the nozzle or fittings in its scope.

At the July 2008 meeting, K. Dorsey reported on this. This task force will review the definition of tank car as it is currently written. Right now it does not include the nozzle or fittings. Al Maty added to this TF.

At the October 2008 meeting, a new charge of reviewing the definition of a tank was added to the TF. TF should have an update by the April 2009 TCC meeting. The industry mentioned that it is important for the task force to review the history of where the current definition of tank was derived.

At the January 2009 meeting, Ken reported that the TF will have a proposal at the April 2009 meeting.

At the April 2009 meeting, it was reported that the TF is working on a proposal and hope to present at the October 2009 TCC meeting.

At the July 2009 meeting, K. Dorsey reported that the TF members are working on the how nozzles are treated in the definition of tank in M-1002 Appendix B. No proposal at this time. The review of both B.1.1.1 and B3.1.1 was added to the charge of the TF.

At the October 2009 meeting, D. Edgel reported on the proposal in the docket. The TF made a motion to move this proposal to the executive committee, seconded, and passed.

At the January 2010 meeting, L. Strouse reported that this review should be handed over to the Appendix D TF. No vote was taken on the proposal in the docket.

At the April 2010 meeting, D. Edgel reported on the amended proposal shown below. The proposal includes editorial changes to Appendix B and the new definition of a "tank". Motion made, seconded, and approved to move amended proposal to the executive TCC for consideration.

At the July 2010 meeting, K. Dorsey reported that the proposal includes editorial changes to Appendix B and the new definition of a "tank". K. Dorsey discussed the TF proposal to create a Class H facility under table B-4. There was opposition from the TCC to sanction welding processes under the supervision of a registered facility. K. Dorsey would like to see Class D retained with the removal of Class H from the proposal. The committee agreed to have the TF review their proposal in light of the concerns.

At the October 2010 meeting, L. Strouse (FRA) reported on the proposal in the docket. TF agreed to remove the class H facility from the proposal. The docket is COD pending TF work on the proposal.

(Staff Note: H. Moffett and A. Maty were asked to be removed from the TF.)

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Review Appendix B Paragraph 3.1.5 for Clarity

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At the January 2011 meeting, COD

At the April 2011 meeting, K. Dorsey reported on the proposal that was sent to AAR in December 2010. Motion made, seconded, and passed to move proposal to the executive TCC. K. Dorsey stated that the wording in paragraph 4.1.1.1 might need to be re-worded.

At the July 2011 meeting, K. Dorsey stated that the wording under the proposal 4.1.1.1 where it states that “welders qualified per Appendix W shall be considered to meet the requirements of AWS D15.1.” will need to be re-worked by the TF because the AAR standard cannot state that welders qualified to appendix W also meet the requirements of AWS. Larry stated that the definition of a tank under 1.2.2 of the proposal does not harmonize with the definition set forth by Transport Canada. TC’s definition of a tank includes nozzles where this proposal does not include nozzles.

The TCC request that the TF investigate the following items:

1. The TF will re-work the wording under 4.1.1.1 and 4.1.1.2 in particular to the reference to AWS.
2. The TF will review the possibility to harmonize with what Transport Canada definition of a tank. The nozzle is current under the definition of a connection not under the definition of a tank.
3. The TF needs to provide justification for each proposed change.

At the October 2011 meeting, D. Edgel reported that the definition of a tank is beyond this TF charge, therefore the AAR will have to open another TF to review the definition of a tank.

At the January 2012 meeting, K. Dorsey stated that he will talk to D. Edgel to see what impact this TF work will have if changes are made to the definition of tank car tank. COD

At the April 2012 meeting, COD

At the July 2012 meeting, COD. Pending completion of the definition of tank car tank.

At the October 2012 meeting, D. Edgel stated that once the T90.25 TF proposal is addressed by the executive TCC this TF resume work.

**T91.22 Proposal 11/12/10**

Original Charge: Review wording in Appendix B3.1.5 for clarity and review definition of tank car tank.

MSRP CIII Chapter 1

Current

1.2.2 Definitions, General

Consists of a shell, heads, and sumps, together with the welds joining them. As used in these specifications, “tank” means tank car tank. The head of the tank is one of the end closures.

Proposed

1.2.2 Definitions, General

Consists of a shell, heads, and the welds joining them, and includes the welds attaching tank connections directly thereto. As used in these specifications, “tank” means tank car tank.

### MSRP CIII Chapter 1 Revisions

#### 1.2.2 Current

Connections – Consists of nozzles, manways, flanges, and other pressure-retaining attachments welded directly to a tank to allow access to its interior.

#### 1.2.2 Proposed

Connections, Tank – Nozzles, outlet saddles, sumps, washouts, and other components welded directly to the tank to contain the lading or vapor.

### MSRP CIII Appendix B

#### Current

**1.1.1** Appendix B describes AAR requirements for certification and registration of facilities for fabrication, assembly, alteration, conversion, repair, associated testing, and qualification of completed tank car tanks as required by AAR and the Department of Transportation (DOT) or Transport Canada (TC) specifications for tank cars.

#### Proposed

1.1.1 Appendix B describes AAR requirements for certification and registration of facility classes listed in tables B3 and B4, and as required by AAR and the Department of Transportation (DOT) or Transport Canada (TC) specifications for tank cars.

### 2.0 Table B1

Add:

Fabricate – For the purposes of certification, fabricate means the production of a tank car tank or tank connection by welding.

#### Current

**4.1.1.1** All personnel engaged in welding on tank car tanks must be performance-qualified in accord with Appendix W for each welding procedure under which they do welding. Welders certified per Appendix W shall be considered to meet the requirements of paragraph 5.1.10.2 of M-1001, *AAR Manual of Standards and Recommended Practices*.

**4.1.1.2** All other welders at a certified facility, or welders at a registered facility performing work that requires registration, must be qualified per paragraph 5.1.10.2 of M-1001, *AAR Manual of Standards and Recommended Practices*.

#### Proposed

4.1.1.1 All personnel engaged in welding on tank car tanks must be performance-qualified in accordance with Appendix W. Welders qualified per Appendix W shall be considered to meet the requirements of AWS D15.1.

4.1.1.2 All other welders at a certified facility, or welders at a registered facility performing work that requires registration, must be performance qualified in accordance with AWS D15.1

Correct the AAR address in the following paragraphs:

5.1

9.1

Exhibit B-3

## MSRP CIII Appendix B

### B3.1.1 Current

Each facility wishing to obtain certification by the AAR Tank Car Committee for

- fabrication of pressure-retaining components

### B3.1.1 Proposed (all other current bullets to remain the same)

Each facility applying for certification by the AAR Tank Car Committee for

- fabrication of tank connections

## MSRP CIII Appendix B

### B3.1.5 Current

Except for subcontract facilities described in paragraph 3.3.3, each facility that fabricates or repairs tank car pressure-retaining components (such as nozzles, sumps, and outlet saddles) that form an integral part of a tank car tank must have Class D certification or other recognized certification such as ASME or ANSI. Only those Class D requirements that apply to work done at the facility must be met.

### B3.1.5 Proposed

Delete

## MSRP CIII Appendix B

### Table B-3 Current

Class D - Facilities that fabricate, repair, or qualify tank car tanks and/or pressure-retaining tank components that are moved to and from the facility without trucks (running gear).

### Table B-3 Proposed

Class D - Facilities that fabricate, repair, or qualify tank car tanks and/or tank connections as defined in Chapter 1 paragraph 1.2.2.

## MSRP CIII Appendix B

### Paragraph 3.3.3 - Current

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.

### Paragraph 3.3.3 - Proposed

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 B-1 form shall be maintained as required by section 4.2 and may be used to demonstrate verification of services or equipment listed in 4.2.1.

### Paragraph 3.4.4 - Current

All work performed by 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.

### Paragraph 3.4.4 - Proposed

Work performed by subcontractors for a registered facility must be verified by the registered facility for compliance with all applicable specifications and regulations. A signed Exhibit B-1 form shall be maintained as required by section 4.2 and may be used to demonstrate verification of services or equipment listed in 4.2.1.



## MSRP CIII Appendix B

### Paragraph 4.2 - Current

#### 4.2 Minimum Equipment Requirements

4.2.1 When a facility subcontracts any of the following services or equipment, the facility must verify the service using an Exhibit B-1 form. :

- Welding inspector per Appendix T
- Hardness testing
- Interior coating / lining applicator and inspector
- NDT equipment
- NDT personnel
- PWHT
- Service equipment maintenance and testing
- Measuring and test equipment and calibration/verification services
- Welding rod ovens (only when using low-hydrogen electrodes)
- Welding machines

### Paragraph 4.2 - Proposed

#### B4.2 Minimum Subcontractor Requirements

4.2.1 When a facility subcontracts any of the following services, the facility must verify the service meets federal regulations and AAR specifications using the Exhibit B-1 form. If the contracted service is provided by a facility that maintains a current AAR M1002 certification or registration, or M1003 certification, then a B-1 form is not required.

- Welding inspector, NDT technicians, and NDT Level III(s) per Appendix T
- Hardness testing
- Interior coating / lining applicator and inspector per Appendix L
- PWHT per Appendix R and Appendix W
- Measuring and test equipment calibration/verification
- Welding rod oven (only when using low-hydrogen electrodes) calibration/verification
- Welding machine calibration/verification

#### 4.1.2.1

Add third bullet:

- NDT Level III per Appendix T for the methods employed.

### **TASK FORCE RECOMMENDATIONS**

- **Revise definition of service equipment to be consistent throughout M-1002.**
  - **Appendix B Table B1 (revise to match Appendix D Table D1)**
  - **Appendix C Table C1 (revise to match Appendix D Table D1)**

**Revise the B-1 (proposed form to be submitted separately)**

EXHIBIT B-1(9/11/09 Draft)
SUBCONTRACTOR EVALUATION SHEET

Each facility shall complete and retain an original copy of this form for each listed Appendix B subcontractor. A company representative responsible for the activity shall attest and affirm, by signing this form, that the subcontractor uses appropriate equipment, procedures, and personnel to meet the requirements of this specification. This form expires one year after the date verified below.

Subcontractor Company Name
Subcontractor Company Address
Service, Product, or Equipment Provided by the Subcontractor
Subcontractor Company Contact

For each service, product, or equipment provided, explain how the company representative responsible for the activity verifies that the subcontractor understands and conforms to the requirements of the Association of American Railroads' specifications for Tank Cars

Personnel:

Four horizontal lines for personnel information.

Processes:

Four horizontal lines for processes information.

Equipment:

Four horizontal lines for equipment information.

Company Representative Attesting / Affirmation

Printed Name and Signature lines.

Date verified and Date of expiration lines.

Review Appendix B Paragraph 3.1.5 for Clarity

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At the January 2013 meeting, COD

CURRENT TF: D. Edgel (Chr), L Strouse, R. Johnson, J. Dinell, T DeLafosse,

CHARGE: Review the wording of M-1002 Appendix B Paragraph 3.1.5 and the definition of  
“Tank” for clarity and to review both B.1.1.1 and B3.1.1.

REFERENCES: D Edgel 9/11/09, 12/13/10

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Propose Requirements for the use of UT to Inspect Limited Access Welds

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**Recent Activity:**

At the January 2013 meeting, K. Dorsey discussed the proposal. It was stated that in order to use this alternative inspection method outlined in the proposal a special permit from the DOT would be required. TCC would like the TF to clarify exactly what weld(s) that cannot be visually inspected to allow the use of UT to inspect. Is there a need to define limited access welds?

This docket has been opened to develop wording for procedures to be used when performing UT on fillet welds that are not available to be inspected visually. J. Dinell and K. Dorsey will work together to determine the appropriate TF charge on the qualification program for tank cars.

At the January 2010 meeting, K. Dorsey reported that words need to be added to M-1002 to incorporate the procedures when performing UT on fillet welds that are not available to inspect visually. TF will provide an update at the April 2010 TCC meeting.

At the April 2010 meeting, J. Dinell reported on the procedures needed to be incorporated into M-1002 in regard to performing UT on fillet welds that are not available to inspect visually. Right now there is only one way to perform this inspection and that is inside the tank. J. Dinell will chair the TF and plans to work with K. Dorsey on the TF charge. J. Byrne and ARI (TBD) would like to participate on the TF. This docket will be moved into Sub 2.

At the July 2010 meeting, K. Dorsey and J. Dinell plan to create a TF charge for this docket. COD

At the October 2010 meeting, J. Dinell reported that the TF cannot proceed any further until FRA weighs in on performing UT on fillet welds that are unable to be inspected visually because of obstructing structure. This docket is COD pending discussion between FRA and J. Dinell.

(Staff Note: A. Ricardo and A. Willaredt will be added to TF and J. Byrne will be removed.)

At the January 2011 meeting, K. Dorsey stated he will talk to J. Dinell and find out what the status is with the FRA. UT is not allowed for fillet welds according to the regulation.

At the April 2011 meeting, J. Dinell stated that the TF is still waiting on an answer from the FRA on whether or not performing UT on fillet welds that are not accessible to inspect visually are required. It was mentioned during the meeting that under the minutes of the January 2011 meeting the statement that UT is not allowed for fillet welds according to the regulations is incorrect. AD McKisic and C. Meeker will be added to this TF. K. Dorsey and J. Dinell will work on the TF charge.

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Propose Requirements for the use of UT to Inspect Limited Access Welds

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At the July 2011 meeting, K. Dorsey reported that the TF should have a proposal by the October TCC meeting.

At the October 2011 meeting, J. Dinnell reported that the TF met recently to discuss the efforts pending resolution from the FRA on whether or not these welds need to be inspected and if required which method is appropriate. TF is working with R. Keltz (FRA) on the clarifying what is expected from FRA on the inspection of limited access welds.

At the January 2012 meeting, COD

At the April 2012 meeting, J. Dinell provided a PowerPoint presentation on the requirements for the use of UT to inspect limited access fillet welds. The TF charge was to review and provide recommendations for the use of Ultrasonic inspection (UT) of 'Limited Access' fillet welds for structural integrity inspections. After J. Dinell explained the TF work a recommendation was provided with states:

This UT technique has proven effective in evaluating cracks into the tank shell propagating from limited access fillet welds.

A motion was made, seconded, and passed to move proposal as provided written above to executive TCC for consideration.

At the July 2012 meeting, the group requested the TF provide more clarity on what they are asking be approved. The proposal may require a government petition.

At the October 2012 meeting, J. Dinell discussed the proposed requirements within the backgrounds. The focus was on the ability to use UT of the "Toe Crack" in the base metal. Mr. Dinell stated that when proper training, proper procedure, and proper techniques are applied; UT is an effective method on limited access welds. The TF understands there are still concerns about the structural integrity requirements the 49 CFR inspection process. TF is stating that this is the only method for limited access welds, they are asking for UT to be allowed as an alternative method.

It was noted that the process doesn't capture the cracks within the weld. It would capture the defects found in the shell material of the tank resulting from a toe crack in base metal.

This will go to the executive TCC for discussion. Motion made, seconded, and passed to move to executive committee.

At the January 2013 meeting, K. Dorsey discussed the proposal. It was stated that in order to use this alternative inspection method outlined in the proposal a special permit from the DOT would be required. TCC would like the TF to clarify exactly what weld(s) that cannot be visually inspected to allow the use of UT to inspect. Is there a need to define limited access welds?

CURRENT TF: J. Dinell (Chair), A. Willaredt, A. Ricardo, M. Untermeyer, L. Strouse, J. Sbragia,  
J. Riggs, G. Alderson, C. Meeker

TF CHARGE:

REFERENCES:

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Use of Ultrasonic Flaw Inspection

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**Recent Activity:**

At the January 2013 meeting, COD

At the October 2000 meeting, it was proposed under Docket T80.2.1 to form a task force to recommend when ultrasonic flaw inspection should be allowed as an alternative to radiographic inspection for tank welds. The task force was formed as identified below.

By e-mail dated 3/21/01, the task force submitted a proposal for consideration.

At the April 2001 meeting the 3/21/01 proposal was discussed. G. Garcia was added to the task force. The working group asked to see the research that validates the proposal and documentation of other industry experiences. A review of AWS D15.1 UT criteria should be made. The working group agreed to move this docket to the TCC docket.

By email of 5/30/01, J. Provinski noted the need for a suitable permanent record for UT, similar to the information captured on an X-ray film, to ensure that the UT setup was correct.

At the July 2001 meeting, the committee has requested the supporting documentation for the proposed techniques. The docket is COD pending review of that information.

At the October 2001 meeting, documentation supporting the proposal was received. The committee is requesting the task force to review the documents and return comments to the working group. M. Riedlinger was added to the task force.

The following is correspondence from P. Kinnecom raising questions on the support documentation received by the committee:

In trying to make sense out of the extensive documentation that was produced at the Committee's request to support use of UT vs. X-ray. There are some discrepancies in the ASME document entitled Case 2235-3. There is a disconnect in the text going from page 359 to what should be the text continuation on page 361. It may be related to the fact that pages 359 and 360 are noted as "SUPP. 12 - BPV" and the balance of the document are noted as "SUPP. 10 - BPV".

It is clearly shown in the documents that UT is a superior method; however, in the documentation there are lots of requirements to be met in using the procedure. Also Appendix T will require, per 7.4.1, examination per ASME Section V Article 5. Do we have this article, and does it include all the requirements noted in, say, Case 2235-3?

Clarifications to the support documents, from J. Dinell, answering questions raised in the above comments, are as follows:

The copy of the code case has some text missing. After comparing it to original, obtained from ASME, the missing verbiage on the top of page 361 is as follows:

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Use of Ultrasonic Flaw Inspection (continued)

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(i) Evaluation and acceptance criteria shall be as follows:

(1) Recording Criteria. Reflectors that produce a response greater than 20 % of the reference level shall be investigated.....you have the rest.

The requirements for using ASME Section V, Article 5 in Appendix T were transferred from Appendix W. The requirement to use ASME specifications has been in W for years. The task force has this article. Code Case 2235-3 was performed under ASME requirements using Article 4. Article 4 meets all the references noted in Case 2235-3

ASME Article 4 is 'Ultrasonic Examination Methods for In-service Inspection' Article 5 is for 'Ultrasonic Examination Methods for Materials and Fabrication'

In other words, Article 4 is for in-service welds, materials, etc. and Article 5 for new welds, materials, etc. The articles mirror and reference each other.

At the January 2002 meeting, the committee questioned the basis for the Ultrasonic Acceptance Criteria shown in paragraph 11.5.3 of the proposal and what provisions are being made for document retention.

At the April 2002 meeting, J. Dinell discussed the background information provided. The committee asked that the T88.1 task force consider document retention and acceptance criteria for this method.

At the July 2002 meeting, it was reported that the task force has not responded to the committees' concerns on document retention and acceptance criteria. K. Dorsey is to query J. Dinell on the status of this docket and propose a side-by-side test of current methods with ultrasonic's to establish confidence in the technique.

At the October 2002 meeting, J. Dinell recommended that this docket be PIS until concerns are addressed.

At the April 2003 meeting, it was reported that this task force has met and recommended reactivation. The task force will review FRA POD data.

At the October 2003 meeting, D. Edgel was added to this task force. The task force is awaiting the report from TTCI and should have comments by the April 2004 meeting.

At the April 2004 meeting, J. Dinell reported no activity on this docket, pending POD results from TTCI and Appendix R inclusion of UT, (reference T80.2.4). Union Tank Car is offering to do a direct comparison of UT versus radiography.

At the July 2004 meeting, this docket was COD for task force work.

At the October 2004 meeting, J. Dinell noted that D Edgel and M. Riedlinger were removed from the task force. The proposal has been sent back to the task force for further consideration.

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Use of Ultrasonic Flaw Inspection (continued)

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At the January 2005 meeting, this docket was COD for task force work. T. Dalrymple noted that this is a good proposal and RSI should push it forward.

At the April 2005 meeting, J. Dinell reported that the task force would like to withdraw the proposal so that issues concerning automated UT could be handled properly.

At the October 2005 meeting, it was reported that the TF is hoping to have a new proposal at the April 2006 meeting.

At the July 2006 meeting, it was reported that J. Dinell would be contacted to report on the progress of this docket.

At the October 2006 meeting, J. Dinell reported that D. Edgel would assume the chair of this TF. The TF is still working on the incorporation of automated UT into M-1002. L. Strouse noted that although the 2003 version of M-1002 had not been adopted by FRA the only issue with UT was in new car production and car builders could request approval from DOT for their process.

At the July 2007 meeting, this docket is COD. AAR will query the TF chair to determine the progress of this docket.

Via e-mail dated 9/18/07, J. Riggs has been added to the TF and nominated to become chair.

At the October 2007 meeting, it was reported that the qualification of ultrasonic inspectors was being reviewed by the TF.

At the April 2008 meeting, it was reported that there was a trial of automated UT scheduled in 2008 which would allow its inclusion in the proposal.

At the July 2008 meeting, it was reported that automated UT test runs are scheduled for later in 2008. After the test runs have been completed the TF hopes to have a proposal for the committee.

At the October 2008 meeting, it was reported that the trials are not yet complete. The task force is developing a standard that should be presented during the April 2009 TCC meeting.

At the January 2009 meeting, it was reported that the TF is still trying to write a standard for automating the UT program. TF will have a proposal ready by the April 2009 TCC meeting.

At the April 2009 meeting, it was reported that the TF is trying to address calibration standards and hope to have a proposal at the October 2009 TCC meeting.

At the July 2009 meeting, it was reported that a proposal is to be available by October 2009 TCC meeting which will include the automated flaw detection processes.

**The following proposal was received via email dated 9/14/09:**

**Summary of Proposal**



1. Add section 11.0 to Appendix T to establish a standard for AUT.
2. Revise applicable sections of Appendix W to clarify acceptance criteria and when the method is to be used.

## **Proposed Addition to Appendix T**

### **11.0 AUTOMATED ULTRASONIC TESTING (AUT)**

#### **11.1 Procedures**

**11.1.1** As a minimum, written procedures shall include the following:

- All the provisions of paragraph 1.18 above (NDT Procedure Requirements)
- Weld and/or material types and configurations to be examined, including dimensions and product form
- The surface or surfaces from which the examination shall be performed
- Ultrasonic techniques (pulsed-echo, phased array or TOFD)
- Angles and mode(s) of wave propagation in the material
- Search unit type, frequency(ies) and transducer size(s)
- Special search units, wedges, shoes or saddles
- Type of couplant and application
- Directions, extent and method of scanning
- Data to be recorded and method of recording
- Recording equipment, as applicable
- Rotating, revolving or scanning mechanisms
- Detailed scan plan
- Calibration procedure
- Evaluation of screen height linearity and amplitude control linearity, as in accord with ASME Section V, Article 4.

#### **11.2 Personnel**

NDT personnel shall be in accord with paragraphs 1.4 through 1.17 above (NDT Personnel).

#### **11.3 Calibration**

**11.3.1** Equipment calibration shall be in accord with paragraph 1.22 above (NDT Equipment Calibration) and the following:

**11.3.2** The proper functioning of the examination equipment shall be checked and the equipment shall be calibrated by the use of the reference standards at the beginning and end of each examination, when examination personnel are changed, or at any time that malfunctioning equipment is suspected. If, during any check, it is determined that the testing equipment is not functioning properly, all of the material that has been tested since the last valid equipment calibration shall be reexamined.

**11.3.3** Reference standards of the same configuration of the test material shall be scanned dynamically at the same speed at which the examination will be performed.

**11.3.4** Overall dimensions and shape of the reference standard shall be determined by the size of the search unit array and scanning device.

**11.3.5** Reference standards shall be of the same product form, P-number grouping, nominal thickness and radius (+/- 10%).

## **11.4 Examination**

11.4.1 Automated ultrasonic examination may use ASME Section V, Article 4 as a guideline concerning implementation and use of AUT technology.

11.4.2 Examination surfaces shall be uniform and free of loose scale and paint, discontinuities such as pits or gouges, weld spatter, dirt or other foreign matter that affect the examination results. Tightly adhering paint, scale or coatings do not necessarily need to be removed for examination purposes if they present uniform attenuation characteristics. The examination surface must be adequate to permit ultrasonic examination at the sensitivity specified. If needed, surfaces may be ground, sanded, wire brushed, scraped or otherwise prepared for examining purposes, if this surface preparation is not detrimental to the functioning of the item under inspection.

11.4.3 Phased array or multi-channel pulsed-echo focused search units utilizing zone discrimination shall be utilized. Time of flight diffraction (TOFD) may be used in addition to the above.

11.4.4 Couplant shall be applied utilizing an irrigated system or other suitable method that will provide a thin consistent layer.

11.4.5 Mechanical indexing and raster scanning shall be encoded and included in the saved examination data.

11.4.6 Data collection systems shall have the ability to electronically save collected examination data in unchanged raw data format. The saved examination data shall clearly indicate the location of discontinuities.

11.4.7 Data analysis may be performed utilizing A, B or C scan presentations.

11.4.8 The material shall be examined by moving the search unit(s) over the surface such that the scan encompasses the entire volume to be examined. Each pass of the search unit shall overlap a minimum of 10% of the transducer element dimension perpendicular to the direction of transducer movement.

## **11.5 Evaluation**

11.5.1 All examinations shall be evaluated in terms of acceptance standards of the referencing specification.

11.5.2 Time or distance amplitude corrections shall be used during calibration and examination. Any reflector that causes an indication greater than 20%, minimum, of primary reference level shall be investigated to the extent that it can be evaluated in terms of the acceptance standards of the referencing specification. Evaluation of indications shall be performed at primary reference level, at minimum.

## **11.6 REPORTS**

11.6.1 Ultrasonic reports shall meet the requirements of paragraph 1.20. In addition, the following shall be either contained on the report or specifically identified in the test procedure:

- Transducer size, frequency, angles and modes of ultrasound used
- Scan plan of test locations and probe configuration
- Type of couplant and method of application
- Calibration block and reference standard identification
- Condition of the surfaces of the test material
- Method of scanning and scan speed

- Active elements used (phased array)
- Probe separation (TOFD)

## 11.7 RECORDS

11.7.1 Electronically stored scan data for each tank shall be retained for not less than 5 years by the tank fabricator or by the car owner.

### **Proposed Changes to Appendix W**

#### **Current:**

## 11.5 ULTRASONIC EXAMINATION

### 11.5.1 General

**11.5.1.1** A Level II NDT technician, qualified in accord with Appendix T, shall review and approve all required ultrasonic examinations.

**11.5.1.2** For groove welds in butt joints on carbon steel tanks (other than tank shell joints of new tanks), ultrasonic examination may be employed in accord with Appendix T.

### 11.5.3 Ultrasonic Acceptance Criteria

Evaluation and acceptance of indications shall be in accord with Appendix 12, paragraph 12-3 of ASME Boiler and Pressure Vessel Code, Section VIII, latest revision, 1988 Addenda. Any indication, which is believed to be non-relevant, shall be regarded as an imperfection. Unless it is shown by reexamination, by the same method or by the use of other nondestructive methods and/or by surface conditioning, that no unacceptable imperfection is present.

### **PROPOSED VERBIAGE:**

#### ***11.5.1 General***

**11.5.1.1** *Ultrasonic examination may be employed in accord with Appendix T for groove welds in butt joints on tank car tanks. A detailed procedure shall be established in accord with Appendix T by each facility.*

**11.5.1.2** *A Level II or Level III NDT technician, qualified in accord with Appendix T for Ultrasonic Testing, shall review and approve all required ultrasonic examinations.*

#### ***11.5.3 Ultrasonic Acceptance Criteria***

**11.5.3.1** *Discontinuities which produce a response greater than 20% of the reference level shall be investigated to the extent that the operator can determine the shape, identity, and location of all such discontinuities and evaluate them in terms of the acceptance standards given below:*

**11.5.3.2** *Indications characterized as cracks, lack of fusion, or incomplete penetration are unacceptable regardless of length.*

**11.5.3.3** *Any relevant indication that intersects the surface of the component or weld shall be rejectable, unless the indication is determined to be caused by a visually (VT) acceptable condition.*

**11.5.3.4** Other discontinuities are unacceptable if the indications exceed the reference level and have lengths which exceed:

**11.5.3.4.1** 1/4 in. (linear length)

**11.5.3.4.2** A group of indications that have an aggregate length greater than  $*T$  in a weld length of  $12T$  or 6 in., whichever is less, except when the distance between successive indications exceeds  $6L$ , where  $L$  is the length of the longest indication in the group.

\* “ $T$ ” is the thickness of the weld excluding any allowable reinforcement. For a butt weld joining two members having different thicknesses at the weld, “ $T$ ” is the thinner of these two thicknesses. If a full penetration weld includes a fillet weld, the thickness of the throat of the fillet shall be included in “ $T$ ”.

**11.5.3.** Any indication, which is believed to be non-relevant, shall be regarded as an imperfection unless it is shown by reexamination that no unacceptable imperfections are present. Reexamination shall be performed by the same method or by the use of other nondestructive methods and/or by surface conditioning.

## **PROPOSED CHANGES TO APPENDIX W, SECTION 19:**

### 19.0 RADIOGRAPHIC INSPECTION REQUIREMENTS

#### 19.1 General

**19.1.1** Unless otherwise provided in a tank specification, the requirements of this section shall apply. **For the purposes of this section “inspection” refers to either radiography (RT) or ultrasonic testing (UT).**

**19.1.2** All rewelded (repaired) areas **areas** shall be radiographed as required by the inspector **re-examined by the original nondestructive test method that discovered the defect.**

**19.1.3** All ~~required~~ radiographic examinations shall be made using the technique and acceptance standards of paragraph 11.2 above.

**19.1.4** **All ultrasonic examinations shall be made using the technique and acceptance standards of paragraph 11.5 above, provided the process is automated. Automated scanning is the relative displacement of the ultrasonic beam and the material being tested by other than manual means. Manual ultrasonic inspection methods are prohibited for initial inspection of tanks constructed in groups per paragraph 19.3.**

#### 19.2 Welded Joints to be **Inspected** (Radiographed **or Ultrasonic**)

**19.2.1** The entire length of the following double-welded butt joints shall be radiographed **inspected:**

**19.2.1.1** All longitudinal and circumferential joints of a tank, except circumferential joints in a multi-unit tank car tank need not be radiographed **or ultrasonic inspected.**

**19.2.1.2** The joint between the shell and certain types of fittings used to provide a reinforced opening. See Appendix E, Fig. E20.2.

**19.2.2** The entire length of a single-welded butt joint with backup shall be radiographed **inspected** when it is used, in combination with less than a full fillet weld, to attach the interior heads of compartment tanks. See Appendix E.

**19.2.3** For tanks constructed of Type 430A material, the radiography shall be performed after the postweld heat treatment. *VACANT*

### **19.3 Inspection Radiography of Nonpressure Tanks Constructed in Groups**

**19.3.1** When a series of carbon steel or high alloy steel tanks made in accord with DOT 179.200 or DOT 179.220, using the same material specifications grouping and welding procedures, are being welded in succession, all double-welded butt joints in each weld joint category must be radiographed **inspected** in accord with paragraph 19.2.1 above, except as follows:

#### **19.3.2 Weld Joint Category**

**19.3.2.1** The double-welded but joints in the tanks may be categorized with respect to WPS, welding operator, and welding machine. Accordingly, the double-welded but joints in a tank may be placed in one or more categories.

**19.3.2.2** Welds in each category shall be treated independently of welds in other categories, and acceptance or rejection and requirements for complete radiography of welds in one category shall have no effect on welds in other categories.

**19.3.3** If, in the first 3 tanks in the initial series of 20 tanks, there are no more than two unacceptable defects in any radiographed circumferential joint, nor more than one unacceptable defect in any 15-ft (4570-mm) radiographed longitudinal joint, then for the next 17 tanks, only the intersections of the longitudinal and circumferential double-welded butt joints need to be radiographed **inspected**. The two unacceptable defects in a circumferential joint must be separated by no less than 10 times the shell thickness *of the thinner member* to qualify for this exception.

#### **19.3.4 Radiography Inspection of Intersections**

**19.3.4.1** A radiograph **An inspection** of an intersection shall include at least 6 in. (152 mm) of the longitudinal joint and at least 2 in. (50.8 mm) of the circumferential joint on each side of the intersection.

**19.3.4.2** When a weld joint at an intersection contains an unacceptable defect, radiography **inspection** of a 6-in. (152-mm) length of the weld joint in question, on each side of the defective weld area, is required.

**19.3.4.3** If the welds adjacent to the welds are acceptable, then the tank welding in question shall be deemed acceptable, and the defective welds shall be repaired and radiographed **inspected** until they are acceptable.

**19.3.4.4** If the welding of the adjacent areas does not comply with the acceptance standards, then all double-welded butt joints in that weld category in the tank, as well as in the two successive tanks, shall be radiographed **inspected** throughout their entire length. These three tanks shall be considered the first of an initial series with respect to that category only, and the radiographic **inspection** examination procedure shall revert to that specified in paragraph 19.3.1 above.

#### **19.3.5 Succeeding tanks**

**19.3.5.1** In each successive series of 20 tanks, only the intersections of the longitudinal and circumferential double-welded butt joints need be radiographed **inspected**, except that one tank, selected at random by the inspector, shall be radiographed **inspected** in accordance with paragraph 19.2.1 above.

**19.3.5.2** If there are no more than two unacceptable defects in any radiographed inspected circumferential joint, nor more than one unacceptable defect in any 15-ft (4570-mm) length of radiographed **inspected** longitudinal joint, then for the remaining tanks in the series, only the intersections of the longitudinal and circumferential double-welded butt joints need be radiographed **inspected**. The two unacceptable defects in a circumferential joint must be separated by no less than 10 times the shell thickness to qualify for this exception.

**19.3.5.3** If defects exceed those in paragraph 19.3.5.2 above, then the tank shall be treated as the first in an initial series of 20 tanks, and the radiographic **inspection** procedure shall revert to that specified in paragraph 19.3.1 above.

**The following comment to the proposal was received via e-mail dated 9/14/09:**

I am not in agreement with the changes being proposed by the UT Task Force because the Ultrasonic Acceptance Criteria does not address in-line and scattered porosity. The current acceptance criteria specified in Appendix W, paragraph 11.2.3 concerning circular or oval shaped discontinuities should not be ignored when performing Automated Ultrasonic Testing and it should be included in the acceptance criteria for automated ultrasonic testing, unless there is data analysis or engineering studies, such as fracture mechanics, which indicate that the criteria can or should be changed. I am also concerned that if the current proposed acceptance criteria for UT becomes part of Appendix W, there will be confusion during the transition period when automated ultrasonic testing is being performed by some of the tank car manufacturers, and some of the other tank car manufacturers are still performing radiography. It is during this transition period that the difference in the acceptance criteria for UT and RT will become apparent to those using RT and could require this task force the direct responsibility for explaining the reason for the difference in the criteria.

At the October 2009 meeting, J. Dinell provided a presentation discussing the performance of automated ultrasonic examination of tank car welds versus other methods of examination. Handouts were provided at the meeting. The TF recommends that Automated UT be allowed as an alternative inspection method for new welding in appendix 'W'. The TF made a motion to move this proposal to the executive committee, seconded, and passed.

At the January 2010 meeting, K. Dorsey reported on the proposal provide within the docket. K. Dorsey reported that the adverse comments provided within the docket have been resolved to the commenter's satisfaction. The committee agreed to adopt the proposal as written in the docket, with one opposing vote by J. Perez (UTLX). J. Perez would like another presentation focused on how the methods compare.

At the April 2010 meeting, COD pending TF work.

At the July 2010 meeting, this docket was COD pending TF work.

At the October 2010 meeting, this docket is continued on docket (COD) pending the publication of Appendix T.

At the January 2011 meeting, COD pending the publication of Appendix T.

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Use of Ultrasonic Flaw Inspection (continued)

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At the April 2011 meeting, K. Dorsey reported that AAR issued CPC-1227 on March 24, 2011 requesting comments on the revisions made to Appendix T of M-1002. Due to the number of significant comments received AAR plans to publish a second CPC after discussing the comments with the TF.

At the July 2011 meeting, K. Dorsey report that the TF has to get back to AAR how they address the comments received.

At the October 2011 meeting, D. Edgel stated that the TF needs the comments on Appendix T from AAR.

At the January 2012 meeting, COD

At the April 2012 meeting, COD pending CPC.

At the July 2012 meeting, the proposal will be coming out in Appendix T. COD. Should be out in August.

At the October 2012 meeting, K. Dorsey stated it will come out for comment in CPC under appendix T.

At the January 2013 meeting, COD

**TASK FORCE:** J Riggs (chair), D Allbritten, PH Williams, M Untermeyer, G Alderson, LH Strouse, R Johnson, G. Garcia, D. Edgel, J. Dinell

**TF CHARGE:** Recommend when ultrasonic flaw inspection should be allowed as an alternative to radiographic inspection of tank welds.

**REFERENCES:** JR Dinell 9/27/04, 10/22/04 (handout); J Riggs 9/14/09; G Alderson 9/17/09; D Edgel 9/17/09

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Review Appendix Y Document Retention Intervals

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**Recent Activity:**

At the January 2013 meeting, COD pending K. Dorsey and J. Rader discussion.

At the April 2002 meeting, T. DeLafosse requested that Appendix Y document retention intervals be reviewed. J. Dinell (Chr), L. Culligan and G. Alderson are the task force members.

At the July 2002 meeting, T. Dalrymple, R. Sobilo, J. Swezey, and J. Rader were added to the task force.

At the October 2003 meeting, J. Rader was made the chairman of this task force and the task force members are now J. Baker, T. Dalrymple, J. Swezey, D Ronzani, J Byrne, and W Fencl.

At the April 2004 meeting, D. Ronzani discussed the task force proposal. T. Dalrymple commented that owners should be responsible for all records pertaining to a car. It was noted that manufacturers have gone out of business in the past and records have been lost but cars always have an owner. Docket is COD for task force.

At the October 2004 meeting, J. Rader discussed the proposal with the committee. The definition of OEM needs to be worked out. T. Dalrymple noted that he disliked the term OEM and would prefer car builder or valve manufacturer for greater clarity and requested that information in the car file be listed specifically so that there is no confusion. J. Rader agreed to the suggestions and will make the necessary changes to the proposal. K. Warner asked what was to be done with records on scrap cars or cars that changed ownership. The task force will consider the input.

At the January 2005 meeting, T Dalrymple noted that car records should be retained by the car owner as opposed to the manufacturer.

At the April 2005 meeting, T. Dalrymple discussed document retention intervals with the committee. M. Lyden requested clarification on the term "while valid". R. Sech noted that "minimum documentation" used in chapter 1 needs to be reviewed. J. Bart remarked that owners would need time to obtain documentation. The committee agreed that the task force should address the noted concerns prior to the July committee meeting.

At the October 2005 meeting, this docket was COD for the task force to review the information in Chapter 1 of M-1002 and the proposed edits prior to committee action. It was noted that this is a major change that would burden the owners (vs. builders) to retain the data.

At the January 2006 meeting, Mike Richardson reported that Jim Rader has requested that this proposal be forwarded to the TCC for consideration. John Byrne requested that the full task force be allowed time to review this proposal. It was reported that Tom Dalrymple also has edits to the current proposal that he would like reviewed. FRA would like to add a member to this task force to discuss the proposal. The proposal has been returned to the TF for more work.

At the April 2006 meeting, this docket was COD for task force work.



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 Review Appendix Y Document Retention Intervals
 

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At the July 2006 meeting, T. Dalrymple requested this docket be COD so that he can review the current proposal in detail. T. Phemister has been added to this TF.

At the October 2006 meeting, J Rader discussed the proposal and recommend forwarding it to the TCC with the edits shown below. K. Warner noted that allowance should be made for historical documents that do not exist in section 1.6.1. J. Rader agreed to form a small task force to address the issue. The working group agreed to forward the proposal with edits.

At the January 2007 meeting, this docket is COD for TF work. L. Strouse will discuss his concerns about the proposed retention of film with the TF.

At the April 2007 meeting, J. Rader proposed that the TF proposal be accepted as written with the understanding that the retention of radiographic film could be handled in a separate docket if it was felt to be warranted. The subcommittee agreed to this, and the docket was advanced to the committee. The committee agreed to the proposal as shown below.

At the July 2007 meeting, AAR staff noted that the proposal was accepted but interest in forming a TF to discuss radiograph film retention would be discussed at the October 2007 meeting.

**The following proposal was received via e-mail dated 9/15/06 and accepted 4/07.**

1. The following sections would be editorially revised to reference Section 1.6, or removed (AAR preference). As information, Column 3 shows the current retention period.

Section	Form and Report	Current Period
Appendix B 3.3.3	B-1 form	Retained at facility
Appendix B 3.3.4	B-1 form	Retained at facility
Appendix B 3.4.4	B-1 form	Retained at facility
Appendix D 2.1.19.1	AAR 4-2	Car owner must retain throughout period of ownership
Appendix D 2.1.19.3	Inspection and test reports	Builder must maintain
Appendix D 2.1.20.2	Inspection and test reports	Car owner must retain a copy until the next inspection and test report
Appendix D 5.0	D-3	Car owner must retain documents
Appendix L 7.2.1	Lining / coating inspection reports	Applicator shall retain for no less then 5-years
Appendix L 7.2.2	Lining / coating inspection reports	Contracting authority shall retain for no less then 10-years
Appendix L 7.2.3 and L 8.8	In-service lining / coating inspection reports	Contracting authority shall retain car in-service/inspection records for the life of the coating /lining
Appendix M 4.5.2	Ductile iron castings	Records of tests, microstructure, examinations, and certifications must be maintained for 5-years
Appendix R 4.2.4	AAR 4-2, 4-3, 4-5, and 4-7 Previously Approved procedures	10 years
Appendix R 19.1.5	Radiographs	5-years
Appendix R 20.3.1	B-1 form	Subcontractor sheet must be retained by the certified facility
Appendix T 6.7	Radiographs	5-years
Appendix U 3.1.5	Service reliability data	10-years
Appendix W 9.1.5.2	Impact tests	5-years
Appendix W 9.2.3.2	Corrosion tests	5-years
Appendix W 12.2.3	Radiograph results	Retained by facility

2. Section 1.3.15 would be revised by deleting the current paragraph and then adding a sentence to reference Section 1.6.4.1.

### 1.3.15 Documentation at the Sale of Tank Cars

At the sale of a tank car, the car owner must transfer the documents outlined in 1.6.4.1 to the new car owner.

3. Section 1.6 would be added to clarify the document retention requirements for car owners, lining and coating owners, manufacturers, and maintenance facilities. The last column in the following tables would be removed after acceptance.

### 1.6 Document Retention

**1.6.1** This section describes the minimum documentation requirements for certified and registered facilities and for tank cars in interchange service, and the minimum retention periods of those documents. In general, documents that pertain to individual tank cars must be retained by the owners of those cars; documents that pertain to linings and coatings must be kept by the owners of those components; documents that pertain to the qualification of facilities to perform work on tank cars must be retained by those facilities; and documents that pertain to approvals of valves and fittings must be retained by the manufacturers of those components. “While valid” means—

- Document has not expired; and
- The document is not preceded by another document containing the same subject matter.

**1.6.2** This standard is mandatory after January 1, 2008.

**1.6.3** Documents may be retained as paper originals, as copies of originals, or in electronic format, and must be available upon request by AAR or government representatives.

**1.6.4** The following table list the document by type, references the requirements for such document, the parties responsible for retaining the document, and the minimum retention period for each type of document.

**1.6.4.1** The following documents must be retained by the car owner: Upon the sale of a car, the documentation pertaining to that car must be transferred to the new owner.

Document	Reference	Proposed Retention Period	Current Retention Period
Original and subsequent certificates of construction	1.4	Life of car	Life of car
AAR Forms 4-2, R-1, and R-2 for modifications and repairs	1.4, 2.1.19.1, R 4.0	Life of car	Life of car
General arrangement, tank, and fittings drawings	1.3.15	Life of car	Life of car
Drawings used for precedent for repairs	1.4.2.3 and R 4.2.4	10 years	10 years
Tank head and shell plate mill test certificates	5.1.4	None	5 years
Tank head and shell plate material identification	5.1.4	None	5 years
Radiographs and radiotapes	R 19.1.5, T 6.7	5 years	5 years
Postweld heat treatment record (consistent with radiograph retention time)	W 17.0 / R. 20	5 years	5 years
Impact, corrosion, and harness tests when required by specification (consistent with radiograph retention time)	W 9.1.5.2, W 9.2.3.2	5 years	5 years
Thermal Analysis of Thermal Protection Systems	179.18 (b)	Life of car	Life of car
Capacity table (gage table)	1.3.8.2	Life of car	Life of car

Document	Reference	Proposed Retention Period	Current Retention Period
Tank maintenance & qualification records— <ul style="list-style-type: none"> <li>• Visual</li> <li>• Structural</li> <li>• Thickness</li> <li>• Service equipment</li> <li>• D-3 form: Certificate of tank test</li> <li>• Certificate of pressure relief device test</li> <li>• Certificate of interior heater coil test</li> <li>• Leak testing</li> <li>• Safety systems</li> </ul>	49 CFR 180.517, D 2.1.19.3, D 2.1.20, D 5.0	Next qualification inspection	Until next test
NDT inspection records	T 1.21	Next inspection	Not in table
Service reliability assessment data	U 3.1.5	Life of car + 10 years	Life of car + 10 years
SS-1, SS-2, and SS-3 stub sill inspection forms (inboard and outboard of the bolster)	D 3.1, and Circulars CPC-1097, 1100, and 1114	Next inspection	Life of car
Permits	49 CFR 107.101 <i>et seq.</i> , and the TDG Regulations Part 14	While valid	Not in table
FRA / TC alternative inspection and test protocol. This does not transfer the approved alternative inspection and test protocol, but merely acknowledges that alternative means of compliance exists. New owners must apply under the terms of 49 CFR 180.509(k), SP-12095, 180.509(j), and CGSB 43-147, 25.5.13.	49 CFR 180.509(k) SP-12095, 180.509(j), and CGSB 43-147, 25.5.13	While valid	Not in table
Ductile iron castings	M 4.5.2	5 years	5 years
Certified inspector's reports for Class DOT-107A tanks	1.4.4.2	Life of tank	Life of tank

**1.6.4.2** The following documents must be retained by each approved certified and registered tank car facility:

Document	Reference	Proposed Retention Period	Current Retention Period
Certification/registration of facilities	B 5.0, B 6.0	6 years	6 years
Welding procedure and procedure qualification	W 10.0	While valid	Until revised
Performance qualification of welders and operators	W 12.0	While valid, plus 90 days	Until requalified
Procedure qualification	W 13.0	While valid	Not in table
NDT written practice	T 1.5	While valid	Not in table
NDT certification records	T 1.11, T 1.9.4	While valid, plus 90 days	Not in table
NDT procedure requirements	T 1.20	While valid	Not in table
Results of radiographic examinations. Radiographs may be retained or discarded	W 12.2.3	5 years	None
B-1 Subcontractor's evaluation sheet (requires an annual review)	B 3.3.3, B 3.3.4, B 3.4.4, B 4.2.2, and R 20.3.1	While valid	Not in table

**1.6.4.3** The following documents must be retained by each registered manufacturer of a tank car pressure relief device, and service equipment:

Document	Reference	Proposed Retention Period	Current Retention Period
Final product test and inspection report	1.4.9	2 years	2 years
Service trial report	1.4.8	Duration of trial	Duration of trial
Approval of pressure relief devices	1.4.5	10 years	10 years
Approval of valves and fittings	1.4.6, 1.4.7	10 years	10 years

**1.6.4.4** The following documents must be retained by each lining or coating owner:

Document	Reference	Proposed Retention Period	Current Retention Period
Rubber lining qualification report	49 CFR 179.201-3	While valid	Not in table
Application/removal or lining inspection	L 7.2.1, L 7.2.2, and L 8.8	While valid	Not in table

Received 4/13/11 from J. Rader

- The following sections would be editorially revised to reference Section 1.6, or removed (AAR preference). As information, Column 3 shows the current retention period.

Section	Form and Report	Current Period
Appendix B 3.3.3	B-1 form	Retained at facility
Appendix B 3.3.4	B-1 form	Retained at facility
Appendix B 3.4.4	B-1 form	Retained at facility
Appendix D 2.1.19.1	AAR 4-2	Car owner must retain throughout period of ownership
Appendix D 2.1.19.3	Inspection and test reports	Builder must maintain
Appendix D 2.1.20.2	Inspection and test reports	Car owner must retain a copy until the next inspection and test report
Appendix D 5.0	D-3	Car owner must retain documents
Appendix L 7.2.1	Lining / coating inspection reports	Applicator shall retain for no less than 5-years
Appendix L 7.2.2	Lining / coating inspection reports	Contracting authority shall retain for no less than 10-years
Appendix L 7.2.3 and L 8.8	In-service lining / coating inspection reports	Contracting authority shall retain car in-service/inspection records for the life of the coating /lining
Appendix M 4.5.2	Ductile iron castings	Records of tests, microstructure, examinations, and certifications must be maintained for 5-years
Appendix R 4.2.4	AAR 4-2, 4-3, 4-5, and 4-7 Previously Approved procedures	10 years
Appendix R 19.1.5	Radiographs	5-years
Appendix R 20.3.1	B-1 form	Subcontractor sheet must be retained by the certified facility
Appendix T 6.7	Radiographs	5-years
Appendix U 3.1.5	Service reliability data	10-years
Appendix W 9.1.5.2	Impact tests	5-years
Appendix W 9.2.3.2	Corrosion tests	5-years
Appendix W 12.2.3	Radiograph results	Retained by facility

- Section 1.3.15 would be revised by deleting the current paragraph and then adding a sentence to reference Section 1.6.4.1.

### **1.3.15 Documentation at the Sale of Tank Cars**

At the sale of a tank car, the car owner must transfer the documents outlined in 1.6.4.1 to the new car owner.

- Section 1.6 would be added to clarify the document retention requirements for car owners, lining and coating owners, manufacturers, and maintenance facilities. The last column in the following tables would be removed after acceptance.

## 1.6 Document Retention

**1.6.1** This section describes the minimum documentation requirements for certified and registered facilities and for tank cars in interchange service, and the minimum retention periods of those documents. In general, documents that pertain to individual tank cars must be retained by the owners of those cars; documents that pertain to linings and coatings must be kept by the owners of those components; documents that pertain to the qualification of facilities to perform work on tank cars must be retained by those facilities; and documents that pertain to approvals of valves and fittings must be retained by the manufacturers of those components. “While valid” means—

- Document has not expired; and
- The document is not preceded by another document containing the same subject matter.

**1.6.2** This standard is mandatory after January 1, 2008.

**1.6.3** Documents may be retained as paper originals, as copies of originals, or in electronic format, and must be available upon request by AAR or government representatives.

**1.6.4** The following table list the document by type, references the requirements for such document, the parties responsible for retaining the document, and the minimum retention period for each type of document.

**1.6.4.1** The following documents must be retained by the car owner: Upon the sale of a car, the documentation pertaining to that car must be transferred to the new owner.

Document	Reference	Proposed Retention Period	Current Retention Period
Original and subsequent certificates of construction	1.4	Life of car	Life of car
AAR Forms 4-2, R-1, and R-2 for modifications and repairs	1.4, 2.1.19.1, R 4.0	Life of car	Life of car
General arrangement, tank, and fittings drawings	1.3.15	Life of car	Life of car
Drawings used for precedent for repairs	1.4.2.3 and R 4.2.4	10 years	10 years
Tank head and shell plate mill test certificates	5.1.4	None	5 years
Tank head and shell plate material identification	5.1.4	None	5 years
Radiographs and radiotapes	R 19.1.5, T 6.7	5 years	5 years
Postweld heat treatment record (consistent with radiograph retention time)	W 17.0 / R. 20	5 years	5 years
Impact, corrosion, and harness tests when required by specification (consistent with radiograph retention time)	W 9.1.5.2, W 9.2.3.2	5 years	5 years
Thermal Analysis of Thermal Protection Systems	179.18 (b)	Life of car	Life of car
Capacity table (gage table)	1.3.8.2	Life of car	Life of car
Tank maintenance & qualification records— <ul style="list-style-type: none"> <li>• Visual</li> <li>• Structural</li> <li>• Thickness</li> <li>• Service equipment</li> <li>• D-3 form: Certificate of tank test</li> <li>• Certificate of pressure relief device test</li> <li>• Certificate of interior heater coil test</li> <li>• Leak testing</li> <li>• Safety systems</li> </ul>	49 CFR 180.517, D 2.1.19.3, D 2.1.20, and D 5.0	Next qualification inspection	Until next test
NDT inspection records	T 1.21	Next inspection	Not in table
Service reliability assessment data	U 3.1.5	Life of car + 10	Life of car + 10

Document	Reference	Proposed Retention Period	Current Retention Period
		years	years
SS-1, SS-2, and SS-3 stub sill inspection forms (inboard and outboard of the bolster)	D 3.1, and Circular CPC-1097, 1100, 1114	Next inspection	Life of car
Permits	49 CFR 107.101 <i>et seq.</i> , and the TDG Regulations Part 14	While valid	Not in table
FRA / TC alternative inspection and test protocol. This does not transfer the approved alternative inspection and test protocol, but merely acknowledges that a alterative means of compliance exists. New owners must apply under the terms of 49 CFR 180.509(k), SP-12095, 180.509(j), and CGSB 43-147, 25.5.13.	49 CFR 180.509(k) SP-12095, 180.509(j), and CGSB 43-147, 25.5.13	While valid	Not in table
Ductile iron castings	M 4.5.2	5 years	5 years
Certified inspector's reports for Class DOT-107A tanks	1.4.4.2	Life of tank	Life of tank

**1.6.4.2** The following documents must be retained by each certified and registered tank car facility:

Document	Reference	Proposed Retention Period	Current Retention Period
Certification/registration of facilities	B 5.0, B 6.0	6 years	6 years
Welding procedure and procedure qualification	W 10.0	While valid	Until revised
Performance qualification of welders and operators	W 12.0	While valid, plus 90 days	Until requalified
Procedure qualification	W 13.0	While valid	Not in table
NDT written practice	T 1.5	While valid	Not in table
NDT certification records	T 1.11, T 1.9.4	While valid, plus 90 days	Not in table
NDT procedure requirements	T 1.20	While valid	Not in table
Results of radiographic examinations. Radiographs may be retained or discarded	W 12.2.3	5 years	None
B-1 Subcontractor's evaluation sheet (requires an annual review)	B 3.3.3, B 3.3.4, B 3.4.4, B 4.2.2, and R 20.3.1	While valid	Not in table

**1.6.4.3** The following documents must be retained by each registered manufacturer of a tank car pressure relief device, and service equipment:

Document	Reference	Proposed Retention Period	Current Retention Period
Final product test and inspection report	1.4.9	2 years	2 years
Service trial report	1.4.8	Duration of trail	Duration of trial
Approval of pressure relief devices	1.4.5	10 years	10 years
Approval of valves and fittings	1.4.6, 1.4.7	10 years	10 years

**1.6.4.4** The following documents must be retained by each lining or coating owner:

Document	Reference	Proposed Retention Period	Current Retention Period
Rubber lining qualification report	49 CFR 179.201-3	While valid	Not in table
Application/removal or lining inspection	L 7.2.1, L 7.2.2, and L 8.8	While valid	Not in table

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Review Appendix Y Document Retention Intervals

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At the July 2011 meeting, K. Dorsey discussed the proposal to change Appendix Y document retention intervals by Jim Rader on April 13, 2011. This proposal will need TF review before considered by the TCC.

At the October 2011 meeting, K. Dorsey stated that AAR plans to make the necessary editorial changes needed to the retention of radiographs. AAR plans to create another CPC including the work under T100.9.2. It was mentioned that there needs to be a review of the provisions in place for terminated employee records.

At the January 2012 meeting, K. Dorsey stated that a CPC needs to be issued. COD

At the April 2012 meeting, K. Dorsey needs to work with J. Radar on items within Appendix Y. COD

At the July 2012 meeting, what is in M-1001 has a few discrepancies and will be reviewed.

At the October 2012 meeting, M-1002 needs to be modified by AAR. COD

At the January 2013 meeting, COD pending K. Dorsey and J. Rader discussion.

## **AAR received proposal via email from J. Rader on 3/12/13**

- The following sections would be editorially revised to reference Section 1.6, or removed (AAR preference). As information, Column 3 shows the current retention period.

<b>Section</b>	<b>Form and Report</b>	<b>Current Period</b>
Appendix B 3.3.3	B-1 form	Retained at facility
Appendix B 3.3.4	B-1 form	Retained at facility
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Appendix U 3.1.5	Service reliability data	10-years
Appendix W 9.1.5.2	Impact tests	5-years
Appendix W 9.2.3.2	Corrosion tests	5-years
Appendix W 12.2.3	Radiograph results	Retained by facility

- Section 1.3.15 would be revised by deleting the current paragraph and then adding a sentence to reference Section 1.6.4.1.

### **1.3.15 Documentation at the Sale of Tank Cars**

At the sale of a tank car, the car owner must transfer the documents outlined in 1.6.4.1 to the new car owner.

- Section 1.6 would be added to clarify the document retention requirements for car owners, lining and coating owners, manufacturers, and maintenance facilities. The last column in the following tables would be removed after acceptance.

### **1.6 Document Retention**

**1.6.1** This section describes the minimum documentation requirements for certified and registered facilities and for tank cars in interchange service, and the minimum retention periods of those documents. In general, documents that pertain to individual tank cars must be retained by the owners of those cars; documents that pertain to linings and coatings must be kept by the owners of those components; documents that pertain to the qualification of facilities to perform work on tank cars must be retained by those facilities; and documents that pertain to approvals of valves and fittings must be retained by the manufacturers of those components. “While valid” means—

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Drawings used for precedent for repairs	1.4.2.3 and R 4.2.4	10 years	10 years
Tank head and shell plate mill test certificates	5.1.4	None	5 years
Tank head and shell plate material identification	5.1.4	None	5 years
Radiographs and radiographic reports or UT reports	R 19.1.5, T 6.7, T7.6	10 years	5 years
Postweld heat treatment record (consistent with radiograph retention time)	W 17.0 / R. 20	5 years	5 years
Impact, corrosion, and harness tests when required by specification	W 9.1.5.2, W 9.2.3.2	5 years	5 years
Thermal Analysis of Thermal Protection Systems	179.18 (b)	Life of car	Life of car
Capacity table (gauge table)	1.3.8.2	Life of car	Life of car
Tank maintenance & qualification records— <ul style="list-style-type: none"> <li>• Visual</li> <li>• Structural</li> <li>• Thickness</li> <li>• Service equipment</li> <li>• D-3 form: Certificate of tank test</li> <li>• Certificate of pressure relief device test</li> <li>• Certificate of interior heater coil test</li> <li>• Leak testing</li> <li>• Safety systems</li> </ul>	49 CFR 180.517, D 2.1.19.3, D 2.1.20, and D 5.0	Next qualification inspection	Until next test
NDT inspection records	T 1.21	Next inspection	Not in table
Service reliability assessment data	U 3.1.5	Life of car + 10 years	Life of car + 10 years
SS-1, SS-2, and SS-3 stub sill inspection forms (inboard and outboard of the bolster)	D 3.1, and Circular CPC-1097, 1100, 1114	Next inspection	Life of car
Permits	49 CFR 107.101 <i>et seq.</i> , and the TDG Regulations Part 14	While valid	Not in table
FRA / TC alternative inspection and test protocol. This does not transfer the approved alternative inspection and test protocol, but merely acknowledges that a alternative means of compliance exists. New owners must apply under the terms of 49 CFR 180.509(k), SP-12095, 180.509(j), and CGSB 43-147, 25.5.13.	49 CFR 180.509(k) SP-12095, 180.509(j), and CGSB 43-147, 25.5.13	While valid	Not in table

Document	Reference	Proposed Retention Period	Current Retention Period
Ductile iron castings	M 4.5.2	5 years	5 years
Certified inspector's reports for Class DOT-107A tanks	1.4.4.2	Life of tank	Life of tank

**1.6.4.2** The following documents must be retained by each certified and registered tank car facility:

Document	Reference	Proposed Retention Period	Current Retention Period
Certification/registration of facilities	B 5.0, B 6.0	6 years	6 years
Welding procedure and procedure qualification	W 10.0	While valid	Until revised
Performance qualification of welders and operators	W 12.0	While valid, plus 90 days	Until requalified
Procedure qualification	W 13.0	While valid	Not in table
NDT written practice	T 1.5	While valid	Not in table
NDT certification records	T 1.11, T 1.9.4	While valid, plus 90 days	Not in table
NDT procedure requirements	T 1.20	While valid	Not in table
Results of radiographic examinations. Radiographs may be retained or discarded	W 12.2.3	5 years	None
B-1 Subcontractor's evaluation sheet (requires an annual review)	B 3.3.3, B 3.3.4, B 3.4.4, B 4.2.2, and R 20.3.1	While valid	Not in table

**1.6.4.3** The following documents must be retained by each registered manufacturer of a tank car pressure relief device, and service equipment:

Document	Reference	Proposed Retention Period	Current Retention Period
Final product test and inspection report	1.4.9	2 years	2 years
Service trial report	1.4.8	Duration of trial	Duration of trial
Approval of pressure relief devices	1.4.5	10 years	10 years
Approval of valves and fittings	1.4.6, 1.4.7	10 years	10 years

**1.6.4.4** The following documents must be retained by each lining or coating owner:

Document	Reference	Proposed Retention Period	Current Retention Period
Rubber lining qualification report	49 CFR 179.201-3	While valid	Not in table
Application/removal or lining inspection	L 7.2.1, L 7.2.2, and L 8.8	While valid	Not in table

Changes to Appendix R

R19.1.5, ... 10 years

Review Appendix Y Document Retention Intervals

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TASK FORCE: J Rader (chr), J Baker, T Dalrymple, J Swezey, D Ronzani, J Byrne, W Fencl, L. Strouse

TF CHARGE: Review appendix Y document retention intervals.

REFERENCES: J Rader 3/23/04, 3/26/04, 8/29/04, 9/14/04X3, 9/16/04X2, 3/8/05, 4/12/06, 8/15/06, 8/27/06, 9/7/06, 9/15/06, 4/13/11; T Dalrymple 9/14/04, 9/15/04, 1/2/06, 8/24/06.; P Kinnecom 9/15/04

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Review the Impact of Making M-1002 Available To Industry Electronically

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**Recent Activity:** See below.

At the April 2012 meeting, executive TCC meeting K. Dorsey asked the Tank Car Committee members whether or not a docket should be opened to investigate the impact of making the M-1002 available electronically. A. Schaffer agreed to be the TF chair. Currently M-1001 and M-1003 is available online. Ken described the challenges of making the M-1002 electronic form.

At the July 2012 meeting, K. Dorsey asked if the group wanted to make M-1002 available on the web like M-1001 and M-1003? Currently, there is not agreement within the railroads on how to fund this initiative.

At the October 2012 meeting, TF Chair will be J. Rader.

At the January 2013 meeting, AAR continues to research this effort. COD

TASK FORCE: J. Rader (Chair), K. Dorsey

TF CHARGE:

REFERENCES: