

AAR/RSI QUALITY NEWSLETTER

Volume 3, 3rd Quarter 2017

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TRANSPORTATION TECHNOLOGY CENTER, INC. TOUR

Submitted by Don Guillen – Transportation Technology Center, Inc.

Members of the Quality Assurance Committees for the Association of American Railroads (AAR) and Rail Supply Institute (RSI) attended a tour of the Transportation Technology Center, Inc. (TTCI) in Pueblo, Colorado.

The Transportation Technology Center, Inc. (TTCI), is a wholly owned subsidiary of the Association of American Railroads. TTCI is a world-class transportation research and testing organization, providing emerging technology solutions for the railway industry throughout North America and the world.

During the tour, members of the committees witnessed firsthand the training for “Crude by Rail Emergency Response” (CBR) at the Security and Emergency Response Training Center (SERTC). Founded in 1985, SERTC is a program that has trained more than 50,000 railroad employees, community first responders, chemical industry representatives, and other government and community officials in hazmat emergency response procedures.



Members of the QA Committees for the AAR and RSI standing in front of a CBR mock derailment at SERTC

In addition to exploring extensive track and state-of-the-art laboratory facilities, the tour took members to several test locations. This provided the members with an inside look at the testing of locomotives, vehicles, track components, signaling devices, and specialized tracks used to evaluate vehicle stability, safety, endurance, reliability, and ride comfort.

VIEWS AND INTERPRETATIONS

APPLICABILITY AND SCOPE (Reference Paragraph 2.2.1 in the Specification and Appendix C)

2.2.1 The contractor's quality assurance program shall apply throughout all areas of contract performance including, as appropriate, the procurement, identification, stocking, inspection, and issuing of material; the entire process of manufacture including design control, fabrication, processing, inspection, and assembly; the packaging, storing, and shipping of material; and the maintenance of equipment that affects quality.

For any equipment in a facility that has a direct effect on quality, you must include in your QA Program how you maintain that equipment. Some examples, depending on the type of work you do in a facility could include the following:

- The shear, brake press, stationary drill, and center plate turning machine affect the Quality of the product and/or the ability to produce a quality product to customer requirements. Therefore, all of this equipment requires a documented maintenance procedure.
- The wheel boring mills, axle lathes, wheel mounting press, and bearing mounting press must be in good working order to operate your wheel and axle shop. Therefore, documented maintenance procedures for that equipment are required.

Defining good working order is interpreted as the ability of the equipment to meet the quality requirements typically spelled out in the applicable MSRP and customer requirements.

Got Questions? Find Answers Efficiently

As the number of activities and facilities obtaining certification under M-1003 grows, so does the quantity of questions the QA committee support staff is asked for clarification. In an effort to help provide the growing population of M-1003 quality professionals an efficient and user friendly way to seek clarification the following resources and their use are called to your attention.

Quick Links:

1. To get to the Quality Assurance Committee web page on your browser use <http://www.aar.com/> and select AAR Technical Services; then select Committees; then select Quality Assurance Committee to view the common resource links needed.
2. To get to the QA newsletters archive follow above and then select Frequently Asked Questions (FAQ) and scroll down to General Questions or use the quick links at the top of the page.
3. To get to the available training topics and calendar for these offerings follow the same steps as above and look for QA Events and Training Courses or use the quick links at the top of the page.
4. Quality Newsletters – use the provided quick links provided in each issue.

There are often overlooked sections of the Manual of Standards and Recommended Practices Section J Specification M-1003 that will address most questions and they are found in the following sections supporting the M-1003 Specification:

Chapter 1 - Contains information on applicability, common terms and their definitions, certification process, program requirements, and application procedure.

Chapter 2 - This Chapter contains the M-1003 requirements. If you run into questions in this chapter see Appendix C for Views and Interpretations that may address your question.

Chapter 3 - This Chapter addresses procedures for certification Application and Maintenance.

Chapters 4-6 - Contains administrative materials in support of M-1003

Chapter 7 - Explains the objectives and process for reporting nonconformances within activities requiring M-1003 certification.

Appendix A - Reference guide of the activities requiring M-1003, their reference in the AAR Field Manual / Circular letter and Technical approval reference.

Appendix C - Views and Interpretation for elements in M-1003 specification prompted by previous questions posed to the Quality Assurance Committee.

Submit your M-1003 request for clarification or interpretation by emailing QA@aar.com.

MID INSPECTIONS AND YOUR QUALITY MANAGEMENT SYSTEM

Submitted by Don Guillen - Transportation Technology Center, Inc. and Bob Wolbert – Progress Rail

Periodically, the Mechanical Inspection Department (MID) compiles a list of exceptions taken by categories which is similar to the list the QA Committee pulls together on M-1003 exceptions taken by element. The MID Inspection Exceptions are provided within this issue by Frequency and Severity. Some, but not all exceptions, may have been taken in a Non-M-1003 required activity -- for example rip tracks or a car shop not repairing cars in excess of 85 hours. Others may have been at a wheel shop, wheel / axle OEM (original equipment manufacturer), brake valve reconditioner or OEM., whose activities are mandated to be performed in a M-1003 Certified Facility.

This article is not intended to differentiate between the two, but rather to focus our attention as quality professionals on where the exceptions could have been prevented. Let's take a look at one of the heavy hitters and explore some possible opportunities to prevent them in your Quality Management System (QMS).

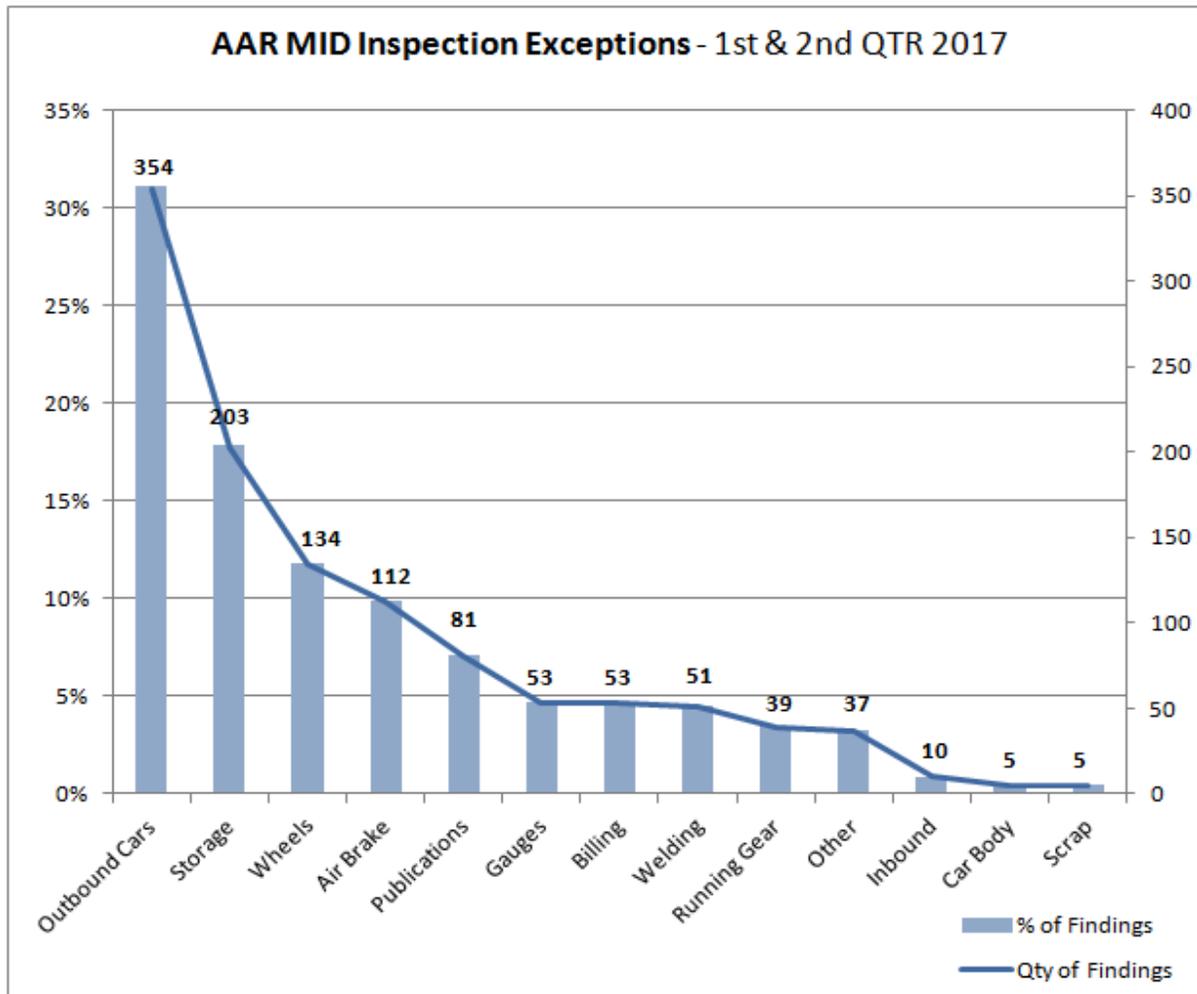


Figure 1: Quantity of MID exceptions by inspection type for the first half of 2017.

#1 Outbound Cars represented 31% of the Exceptions Taken

Cars are inspected prior to release for service to insure that defects have been properly identified and corrected by the repairing facility. Sounds pretty straight forward, right? Let's look at some of the opportunities for the QMS to ensure the results are as expected.

- **Inspection and Test Plan (ITP) / Hold Points** - These represent our plan to effectively prevent quality spills. Ensuring the ITP is developed and implemented requires resource planning that reaches beyond the production process itself.
- **Measuring and Testing Equipment (MTE)** - Having the required MTE and personnel trained to utilize them represents the prevention of common outbound car defects. This MTE includes:
 - Friction shoe height gauges
 - Coupler height gauges
 - Side bearing gauges

- **Inspections – Incoming; In-Process and Final** – These are required to be conducted by trained personnel that have been properly equipped with knowledge and tools to be successful.
 - Incoming – cars for repair, materials / components used in repair
 - In-Process – cars under repair present the opportunity to alert to defects not readily noted during the initial inbound inspections including defects that may have been partially concealed from view. This inspection process involves the mechanics, supervision and quality personnel in our efforts to produce defect free cars
 - Final Inspection - represents the last opportunity to self-alert and correct a defect missed or a workmanship issue. We should never expect this inspection to be 100% effective if we have not properly conducted the preceding inspections.

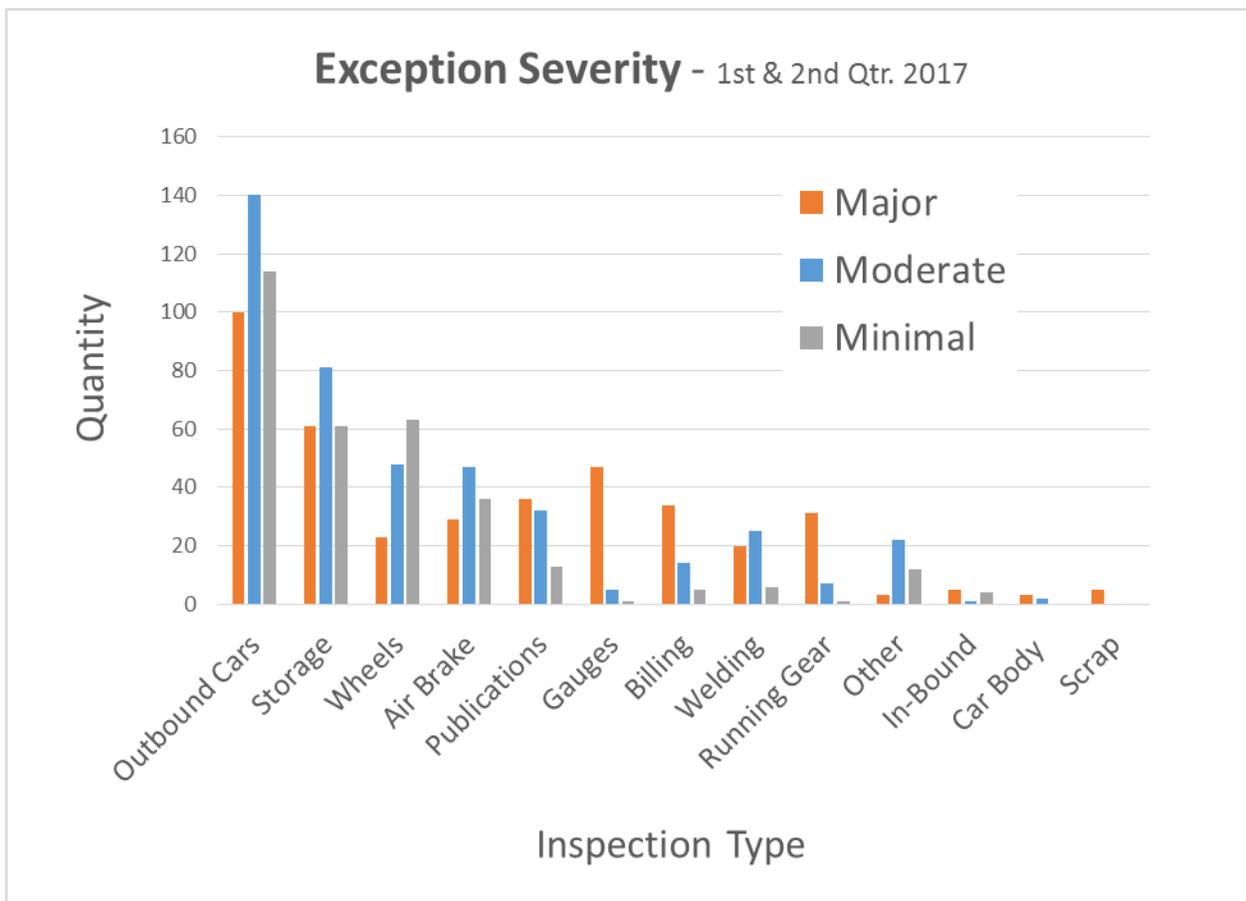


Figure 2: Quantity of MID inspection exceptions by severity for the first half of 2017.

- **Contract Review** - Car repair is subject to customer provided scope of repairs / modifications and it is the responsibility of the repair facility to ensure AAR requirements are satisfied. This includes but isn't limited to the Field Manual, applicable MSRPs and technical checklist requirements.
- **Inspection Status** - Controlling car movement and unintentional release is accomplished through layered inspection status controls. They can include, physical car marking and initials on records of repair.

- **Nonconformance Control** – Protects against using defective materials / components and is supportive of inspection status to prevent a quality spill. It also triggers Corrective Actions aimed at resolving the current and preventing future issues
- **Training** – Car inspection requires a deep knowledge of the AAR rules and a keen sense to detect both the obvious and the not so obvious. The AAR Field Manual has 100 plus rules covering 700 plus pages. Each rule includes a cause for attention and a correct repairs / general information section. **Ensuring that training developed is specific and effective for the job duties assigned to key personnel is one way to prevent defects.**
 - Inbound car inspection personnel
 - In-process inspection personnel
 - Production mechanics
 - Supervisory personnel
 - Final / Outbound inspection personnel

Training is a frequently used root cause during corrective actions. How do we ensure training is adequate?

- Identify the requirements – training needed / # of personnel needing same
- Determine the need for specialization to provide focused training
- Develop the curriculum / frequency and method of training
- Provide the training and collect feedback for improvement
- Assess the effectiveness of training – testing, demonstration of proficiency, process auditing
- Provide for the recurring proficiency of training
- Provide new training curriculum to address industry changes
- Use Job briefs and team meetings as an opportunity to allow employees to answer questions / demonstrate knowledge / effectiveness of training retention

CALIBRATION TRACEABILITY

Submitted by Donna Jacobi – Amsted Rail

Most quality standards (including AAR M-1003) require that measuring and test equipment is calibrated and that the calibration is traceable to a national or international standard. Metrological traceability requires the establishment of an unbroken chain of calibrations linking them to relevant primary standards of International System of Units (SI). In the US, that generally means traceability to NIST (National Institute of Standards and Technology). Per their stated policy on traceability, “NIST is responsible for developing, maintaining and disseminating national standards – realizations of the SI – for the basic measurement quantities and for many derived measurement quantities.”



As an example, let's look at the calibration of a pair of digital calipers. A metrology lab may calibrate the calipers by measuring a gauge block (jo block). In the photo a 0.950 inch gauge block is checked with digital calipers. In this case the SI units are meters as this is the SI unit of length. An inch is 0.0254 meters.

The calibration record for the caliper must include the serial number of the caliper, and it must also include the serial number of the gauge block used to verify calibration. The calibration record for the gauge block must include the serial number of the device that was used to calibrate it and include traceability to

NIST. Many calibration labs are certified to ISO 17025 and will also include reference to their ISO 17025 certification, but this does not replace traceability to a national standard. The calibration certificate should include a statement similar to: "This item has been calibrated using measurement standards traceable to the SI through the NIST". In the past NIST has issued test report numbers, but these numbers are not meant to be used as proof of traceability.

Calibration certificates should also include before (as found) and after (as left) readings. There should also be a stated tolerance for the measurement so that it is clear whether or not the as found measurements were within the tolerance. If the as found measurements were within tolerance, no adjustment may have been needed and there may not be any information listed for the as left measurements.

Calibration certificates should be reviewed by a knowledgeable person. One of the items to be reviewed is that NIST traceability is stated on the certificate. The reviewer must verify that any calibrations that had out of tolerance as found measurements are investigated to determine the potential impact on prior measurements of products or processes made with that device.

NEWSLETTER PROCESS

Submitted by Donna Jacobi – Amsted Rail

The AAR/RSI Quality Newsletter is completed each quarter by the AAR/RSI Communications TAG whose membership is listed at the end of this newsletter. The TAG members would like to encourage the newsletter audience to submit articles for future newsletters. Topics for articles can include (but are not limited to): Railroad profiles, news from Class I railroads on any new programs being implemented, case studies highlighting a quality system/program, tips & tricks for implementing a quality program, or frequent audit findings. The newsletter is issued at the end of each quarter. Any articles for the newsletter need to be submitted before the end of the first week of the 3rd month in the quarter. Due to the holidays, 4th quarter articles need to be submitted by December 1.

The process for completing the newsletter includes a 3 step process:

1. AAR/RSI TAG reviews and edits the articles and drafts the newsletter.
2. The draft newsletter is submitted to the AAR QAC and the RSI leadership for review & approval.
3. The updated draft newsletter is submitted to TTCI for final review.

Anyone interested in submitting an article, please email your article to Donna Jacobi at djacobi@amstedrail.com or Gary Alderson at alderson@alltranstek.com.

WRITING A NONCONFORMANCE

Submitted by Gary Alderson – AllTranstek, LLC

Many of us in QA management at a company are reluctant to write an internal nonconformance because it appears to be “finger pointing” or blaming. Instead, the nonconformance should be considered as a tool to capture repetitive or isolated incidents that are discovered in the repair or manufacturing process. The issues can then be addressed by quality, engineering, materials, production, and related departments within the company.

If the nonconformance occurs after a hold point in the inspection and test plan, it is imperative that a nonconformance be written per the company nonconformance procedure. This action will capture the nonconformance and provide root cause and corrective action. It will also allow for a history of the particular nonconformance that can be compared over time to verify repetitive occurrences, and how to provide a root cause and corrective action.

For example, the process of using a designated form and providing a description of the nonconformance, such as “damaged wheel bearing” or “hole found in tank car jacket after grit blast” can be written by any employee and handed in to the quality department. The quality department will enter the nonconformance into the company’s nonconformance system. After reviewing it with the responsible parties, a disposition is assigned to correct the nonconformance, and then a root cause investigation is processed by the quality assurance department to determine the preventive action. The goal is to permanently prevent the nonconformance from happening again.

Weekly meetings can be held with the responsible departments to review and approve nonconformance actions and to provide statistics or data collection of areas that have improved to provide a visual tool to show how writing a nonconformance can contribute to overall continuous improvement.

FYI: Previous issues of the AAR/RSI Quality Newsletter are available on the AAR QAC Frequently Asked Questions website and the RSI QAC website:

<http://www.rsiweb.org/qac>

<http://www.aar.com/standards/FAQ.html>

CALENDAR OF EVENTS AND IMPORTANT LINKS

2017/2018 Calendar of Events

Training	Date	Location
Advanced Auditor Training	Nov. 7-9, 2017	DeCoursey, KY
AAR Quality Auditor and Industry Conference	Jan. 22 - 25, 2018	Fort Worth, TX
Root Cause & Corrective Action	None currently scheduled	

[Registry of M-1003 Certified Companies](#)

[M-1003 Frequently Asked Questions](#)

[AAR M-1003 Certification on-line Application](#)

[AAR M-1003, Section J Specification for Quality Assurance](#)

[AAR Training Schedule](#)

[AAR Circulars](#)

[MSRP Publication Current Revision Status](#)

[AAR Online Material Nonconformance Reporting System \(Chapter 7\)](#)

[Railway Supply Institute](#)

Important Links

The AAR /RSI Joint QA Newsletter is provided through the efforts of AAR Quality Assurance Committee and Railway Supply Institute Quality Assurance Committee members in an effort to provide information that is important to our industry in support of improving the quality of products and services provided. You can support this process by submitting your questions and ideas for improvement to QA@aar.com.

THE FOLLOWING AAR QAC AND RSI QAC TEAM MEMBERS WORKED ON THIS NEWSLETTER AS PART OF THE COMMUNICATION TECHNICAL ADVISORY GROUP:

AAR QAC

Don Guillen – TTCI/AAR

Ray Morgan – Watco Transportation Service

Sheena Prevette – TTCI/AAR

Jaimie Ryan – Union Pacific Railroad

Bob Wolbert – Progress Rail

RSI QAC

Gary Alderson – AllTranstek

Donna Jacobi – Amsted Rail

Dean Matzo - Trinity



Have an idea for an article? Please submit your drafts to Donna Jacobi at djacobi@amstedrail.com or Gary Alderson at alderson@alltranstek.com.