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BENEFITS OF HOSTING ADVANCED AUDITOR TRAINING CLASSES

By Kirk Wilson – Amsted Rail

The Amsted Rail facility in Greenville, SC had the opportunity to host the AAR Advanced Auditors training class headed by Don Guillen and Arturo Castanon at our facility again on May 8, 2025. This class consisted of seventeen auditors in training in three groups. This was an exciting event where a mock audit of our facility is part of the training program. We forward our quality manual and our procedures to the trainers so that they can review the material with the class and compare

it to the AAR M-1003 standard, auditing the material before hitting the shop floor to audit the shop environment. This hands-on approach to audit training is very beneficial to the trainees interacting with actual employees in a working production, shipping, receiving and inspection environment.

It was great to see so many eager and engaging folks interested in quality and auditing. We had all three groups working on different elements of the standard as they conducted the mock audits. The trainees did a great job of digging deep into records, drawings, revisions, calibrated tools, work instructions, training records and control plans. The trainees asked a lot of great questions and we worked to provide the objective evidence answering their question during the training.

Audit findings were put into reports and discussed in detail to determine the merits of the findings and where the proper clause of MSRP Section J, M-1003 could be referenced. Finished reports were used the next day in the class where the findings were evaluated for the possible causes for the findings using a 5 Why document. The documents were then projected on a screen, and

each was reviewed in detail discussing what the trainees had arrived at concerning root cause. I was able to help fill in some blanks as the groups worked through the exercise to conclusions. Overall, I found the hosting of this training very engaging and insightful giving me insight into how other people review and understand your quality management system and this provides an excellent opportunity to pursue some audit findings



outside the scope of a formal audit. Given the choice I think we would enjoy hosting this training annually. Special thanks to Mark Michel Amsted Rail, Greenville (ARG) Director of Engineering and Michael List ARG Service Engineer.

QUALITY MANAGEMENT SYSTEMS AND THEIR EVOLUTION

By Bob Wolbert – Progress Rail and Donna Jacobi – Amsted Rail

Quality management systems and related standards aren't new. The AAR M-1003 and ISO 9001 quality system standards have both been around since the 1980's. Although there was a period of time when both standards were very similar, they have evolved differently over time.

The ISO 9001 standard focus has evolved progressively as illustrated below:

- | | |
|------|---|
| 1987 | A Contract Tool |
| 1994 | The Customer Satisfaction Standard |
| 2000 | The Continual Process Improvement Standard |
| 2008 | One small edit to scoping language and revision date change |
| 2015 | Risk based (major rewrite and shuffling of paragraphs) |
| 2026 | Pending 4 Qtr. publish date |
- Enhanced risk management vs. risk-based thinking
 - Stakeholder vs. interested parties
 - Ethics and Integrity
 - Digital transformation
 - Sustainability/environmental responsibility
 - Quality culture versus quality system focus
 - Expansion of the concept of customer satisfaction to become the entire customer experience

International quality management systems have developed over the years through publishing more than 24,000 ISO standards to afford improved focus. Several industries, including aerospace, automotive, medical devices, software engineering, and others have industry specific quality management standards. Generally, ISO 9001 is used as the basis for these standards.

Our industry should not be surprised with the advancement of the ISO 22163 Railway applications – Railway quality management system - ISO 9001:2015 and specific requirements for application in the railway sector. The first edition of 22163 was published in 2017 as ISO/TS 22163. The standard was later revised and reissued in 2023 as ISO 22163. The introduction to the current version reads as follows:



Have an Idea for an Article?

Please submit your drafts to Gary Alderson at alderson@alltranstek.com or Alfredo Ricardo at ricardo@alltranstek.com

Interested in Joining RSI QAC?

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The aim of this document is to develop and continually improve a railway quality management system to ensure product quality including safety in the global railway sector, in order to satisfy customer needs.

This document adds the supplemental railway sector specific requirements to ISO 9001:2015.

AAR M-1003 and ISO 22163 are both railway industry quality standards. So, what's different when contrasting the two? Let's start by making a high-level comparison. The two standards are organized in very different fashions.

AAR M-1003 Elements	ISO 22163 Elements
1. Introduction 2. Quality Assurance Program Requirements 2.1. Objective of Quality Assurance Program 2.2. Scope and Applicability 2.3. Quality Assurance Program and Manual Requirements 2.4. Leadership and Management Responsibility 2.5. Production, Inspection, and Test Planning 2.6. Corrective and Preventive Actions 2.7. Document Control 2.8. Measuring and Testing Equipment 2.9. Purchasing/Subcontracting 2.10. Incoming Inspection 2.11. In-Process Inspection 2.12. Final Inspection 2.13. Inspection Status 2.14. Identification and Traceability 2.15. Process Control 2.16. Preservation, Packaging and Shipping 2.17. Quality Records 2.18. Nonconformance Control 2.19. Improvement and Change Management 2.20. Statistical Methods 2.21. Internal Quality Audits 2.22. Training 2.23. Contract Review 2.24. Design Control	1. Scope 2. Normative References 3. Terms, definitions, and abbreviated terms 4. Context of the organization 5. Leadership 5.1. Leadership and commitment 5.2. Policy 5.3. Organizational roles, responsibilities and authorities 6. Planning 6.1. Actions to address risks and opportunities 6.2. Quality objectives and planning to achieve them 6.3. Planning of changes 7. Support 7.1. Resources 7.2. Competence 7.3. Awareness 7.4. Communication 7.5. Documented information 8. Operations 8.1. Operational planning and control 8.2. Requirements for products and services 8.3. Design and development of products and services 8.4. Control of externally provided processes, products and services 8.5. Production and service provision 8.6. Release of products and services 8.7. Control of nonconforming outputs 8.8. Reliability, availability, maintainability, safety and life cycle costing 9. Performance evaluation 9.1. Monitoring, measurement, analysis and maintainability 9.2. Internal audit 9.3. Management review 9.4. Process reviews 10. Improvement

The organization of the standards isn't the only distinction. The focus of ISO 22163 and AAR M-1003 and the resulting terminology also show a marked difference. There has been a move toward risk mitigation in ISO-based standards with a continued focus on the customers' needs which are further detailed in the frequently

used terms: Performance, Safety, Improvement, Reliability, Satisfaction, etc. as can be seen in the comparison table below.

Terminology counts within each quality standard:

Terms	ISO 22163	AAR M1003
Customer	156	13
Change	117	24
Risk	89	1
Performance	68	6
Safety	54	0
Communication	37	1
Improvement	35	4
Evaluation	30	3
Satisfaction	24	0
Obsolescence Management	17	0
RAM (Reliability, Availability, And Maintainability)	17	0
Life Cycle Costing (LCC)	15	0
Continual	13	1
Business Continuity	12	0
Customer Satisfaction	11	0
Procedure	11	33

One example of the difference between the 2 standards can be seen in change management. ISO 22163 includes change management in sections 6.3, 8.1.1, 8.1.3, 8.1.4, 8.2.4, 8.3.6, and 8.5.6, while M-1003 only mentions change management in section 2.19. ISO 22163 section 8.1.1 operational planning and control - supplemental covers what's included in M-1003 element 2.5 but also includes a lot more. ISO 22163 section 8.1.1 puts focus on project management for implementing new products, services, and technologies. The standard incorporates innovation management, project scope management, project time management, project cost management, planning of the transfer of processes, project quality management, project human resource management, project communication management, project risk and opportunities management, project procurement management, and project review management. All these topics relate to controlling changes to production or service processes to mitigate risk to the customers. This is separate from product design, which is included in section 8.3. This is just one example where the change and risk management focus is different between the standards.

As the AAR M-1003 specification undergoes revisions in the future, we should expect changes to address improvement opportunities to our industry driven in part by improvements to globally accepted ISO standards such as ISO 22163.

Future articles will focus on opportunities for QMS improvement utilizing 22163 focus/terms and supporting tools as a guide.

2025 AAR QUALITY ASSURANCE TRAINING SCHEDULE

Course	Date	Location
Basic Auditor Training Class	July 15-17	Virginia Beach, VA
	September 16-18	Pueblo, CO
	November 4-6	Nashville, TN
Advanced Auditor Training Class	August 19-21	Celaya, MX (Spanish)
	September 23-25	Lincoln, NE
	Sept. 30 – Oct. 2	Mira Loma, CA
	October 7-9	San Luis Potosi, MX (Spanish)

USEFUL LINKS

[Railway Supply Institute](#)

[RSI QAC & Previous Newsletters](#)

[RSI Tank Car Resource Center](#)

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

[M-1003 Frequently Asked Questions](#)

[American Society for Quality - Training](#)

[RSI 100](#)

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

[AAR M1003, Section J Specification for Quality Assurance](#)

[AAR Training Schedule](#)

[AAR Circulars](#)

[MSRP Publication Current Revision Status](#)

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

[AAR FAQ Page includes QAPE](#)

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