



Alan Wire


QUALITY MANUAL WITH SUPPORTING PROCEDURES

AS9100C:2009 and ISO 9001:2008

**5455 Second Street
Irwindale, CA 91706**

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Copy No.	Copy Custodian
1 Electronic Master	Quality Representative
2 Hard Copy	Quality Representative
3 Hard Copy	President
4 Hard Copy	Production Lead

All employees can access the Master Copy of the Procedures Manual with Supporting Procedures through the Quality Representative and / or through their supervisors. Any printed and / or saved versions other than the controlled copies listed above are uncontrolled unless the word “**Controlled**” in the footer appears in red.



Quality Policy

Alan Wire, a distributor and manufacturer of wire and cable, is committed to meeting customer requirements and increasing customer satisfaction through adherence to our Quality Management System and continual improvement of our products, processes, services, and communication. This requires the commitment of all our employees and suppliers.

Hoyt Sullivan – President

Quality Objectives

1. Customer satisfaction score of at least 95% as determined by customer survey.
2. RMA for Cause per Line Items Shipped of .5% or less.
3. On-time Delivery of 95% or higher.
4. Supplier Performance of 98% or higher.

Introduction

Scope of the Quality Manual:

This Quality Manual with Supporting Procedures describes the quality management system of Alan Wire. The quality management system described in this manual meets the requirements of the AS9100C:2009 and ISO 9001:2008 international standards.

Scope of Registration:

Distribution and Manufacture of Wire and Cable to the Aerospace, Satellite, and Defense Industries.

Geographic Scope:

5455 Second Street
Irwindale, CA 91706

Permissible Exclusions:

When Alan Wire identifies conflicts in specifications or areas where we feel improvements can be made, we make suggestions to our customers that may become input to their design. We acknowledge involvement with clause 7.3.4, Design Review, and clause 7.3.2, Design Inputs. We claim exclusion to the remainder of element 7.3.

About Us:

Alan Wire carries a far-reaching product line. We have one of the most extensive inventories of Aerospace and Mil-spec wire and cable in the world.

Examples include:

- Military Hook-up Wire.
- Military Cable.
- Coaxial Cables.
- Commercial Hook-up Wire.
- Other hard to find special niche products.

We also:

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- Manufacture wire and cable to specifications.
- Provide a full range of Value Added services.
- Provide Laser Printing.

We are an approved distributor for:

- Harbour Industries
- Helistrand
- Judd Wire Inc.
- Specialty Cable
- Zeus
- Supertemp

GLOSSARY

For purposes of all quality management system documentation, the definitions given in the vocabulary portion ISO 9000:2005 and AS9100C are used as guidance. Where appropriate, we have amended some definitions based on their specific application to our quality management system (QMS).

Concession: permission to use or release a product that does not conform to specified requirements.

Correction: action to eliminate nonconformity.

Corrective action: action to eliminate the root cause of nonconformity or other undesirable situation in order to prevent their recurrence.

Critical Items: those items (e.g., functions, parts, software, characteristics, processes) having significant effects on the product realization and use of the product; including safety, performance, form, fit, function, producibility, service life, etc.; that require specific actions to ensure they are adequately managed. Examples of critical items include safety critical items, fracture critical items, mission critical items, key characteristics, etc.

Customer: organization or person that receives a product.
(NOTE- a customer can be internal or external to the organization)

Customer satisfaction: customer's perception of the degree to which the customer's requirements have been fulfilled.

Design and development: set of processes that transform requirements into specified characteristics and / or into the specification of a product, process or system.

Document: information and its supporting medium (Examples: Quality Manual, procedures, work instructions / standard operating procedures, and blank forms that are required to provide products to customers).

Effectiveness: extent to which planned activities are realized and planned results achieved.

Efficiency: relationship between the result achieved and the resources used.

Foreign object: any material that is not intended to be part of the final product.

Infrastructure: set of facilities, equipment, and services needed for the operation of an organization.

Internal audit: (performed by the organization itself) systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

Key Characteristics: an attribute or feature whose variation has a significant effect on product fit, form, function, performance, service life, or producibility, that requires specific actions for the purpose of controlling variation.

Key Performance Indicator (KPI): a metric that measures the trend of a core process to help evaluate the health of that process.

MME: monitoring and measuring equipment (also frequently referred to as “calibrated equipment”).

Nonconformity: non-fulfillment of a requirement.

Nonconforming Product: those products that contain one or more departures from the associated drawing, specification, or contractual requirement.

Organization: Alan Wire.

Preventive action: action to eliminate the cause of a potential nonconformity or other undesirable situation in order to prevent their occurrence.

Process: set of interrelated or interacting activities, which transforms inputs into outputs.

Product: result of a process (for the purposes of all quality management system documentation, the term "product" is also used to denote "service," as appropriate).

Quality objective: something sought, or aimed for, related to quality. Also see Key Performance Indicator.

Quality planning: the part of the quality management system that is focused on setting quality objectives and specifying necessary operational processes and related resources to fulfill the quality objectives.

Quality policy: overall intentions and direction of an organization related to quality as formally expressed by top management.

Quality plan: a document specifying which procedures and associated resources shall be applied by whom and when to a specific project, product, process or contract.

Record: document stating results achieved or providing evidence of activities performed.

Re-inspect: inspection required after completion of repair or rework activities.

Requirement: need or expectation that is stated, generally implied, or obligatory.

Rework: the reprocessing of nonconforming material to make it conform completely to requirements.

Risk: an undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence.

Scrap: action to a nonconforming product to preclude its original unintended use.

Special Requirements: those requirements identified by the customer, or determined by the organization, which have high risks to be achieved, thus requiring their inclusion in the risk management process. Factors used in the determination of special requirements imposed by the customer that are at the limit of the industry's capability, or requirements determined by the organization to be the limit of its technical or process capabilities.

Standard(s): governmental, industry, national and international quality standards including AS9100C:2009 and ISO 9001:2008.

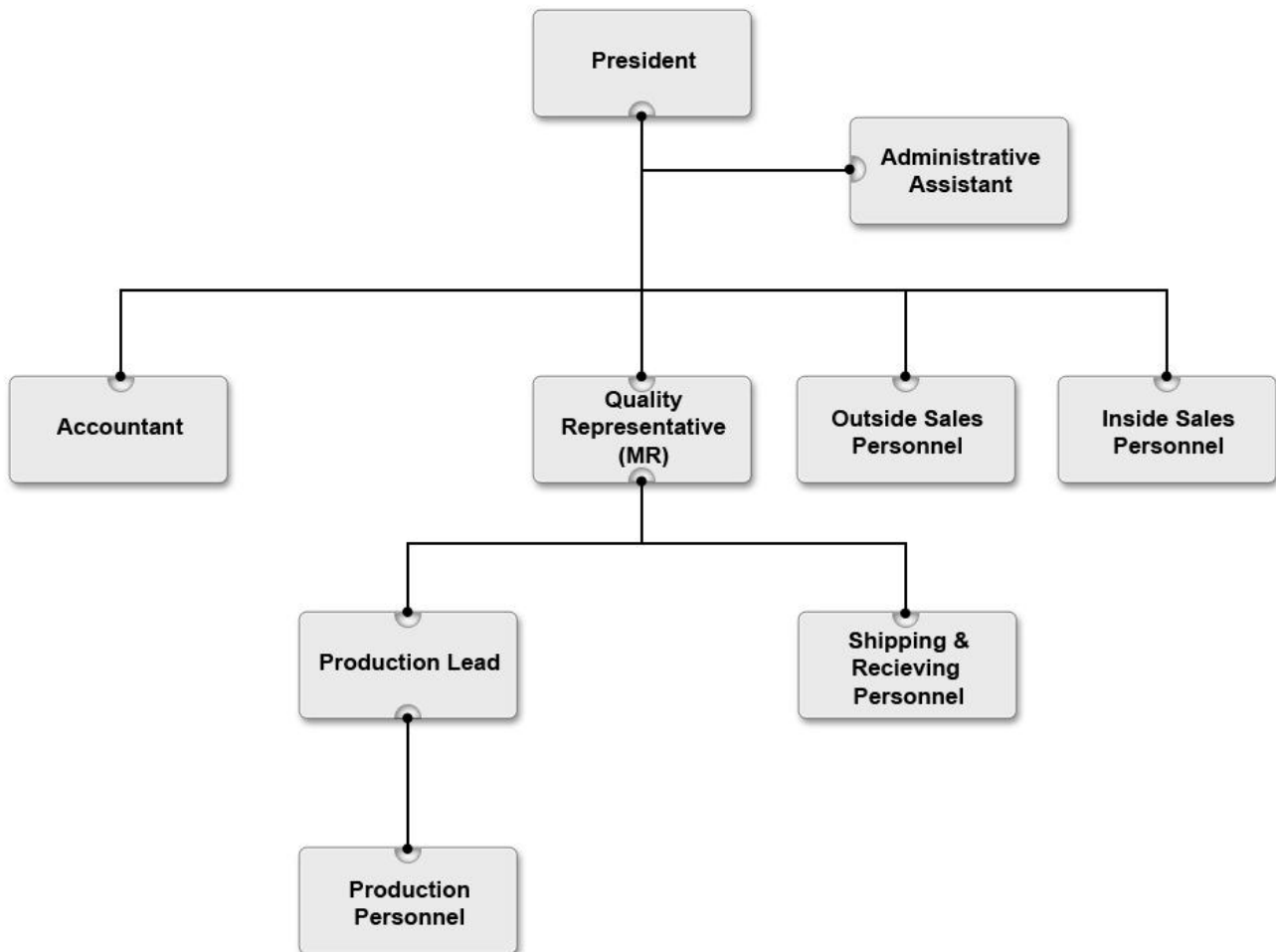
Supplier: organization or person that provides a product or service.
(NOTE- a supplier can be internal or external to the organization)

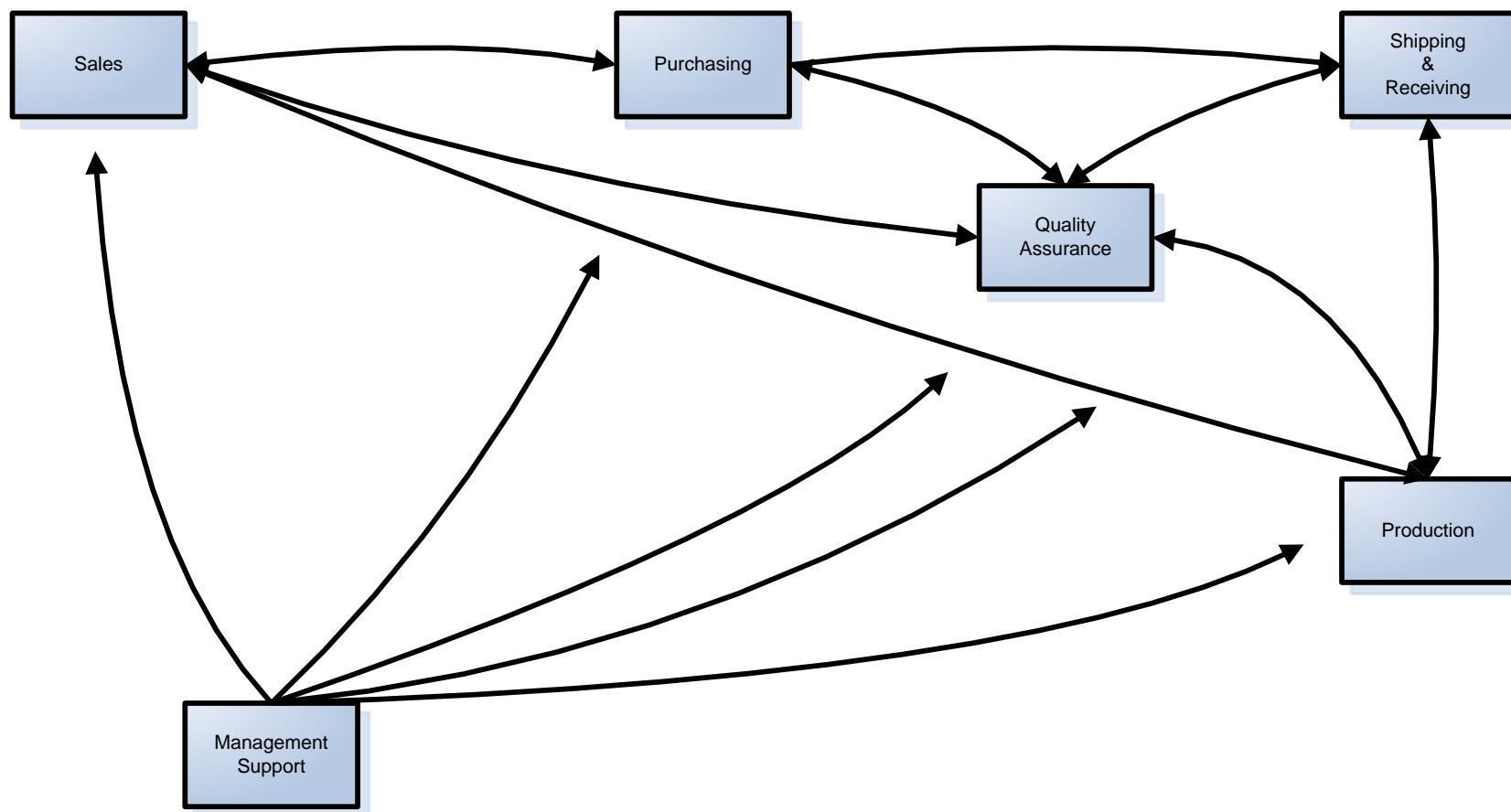
Top Management: person or group of people who direct and control an organization at the highest level.

Validation: confirmation, through the provision of objective evidence that the requirements for a specific intended use or application are capable of being fulfilled.

Verification: confirmation, through the provision of objective evidence that specified requirements have been fulfilled.

Work environment: set of conditions under which work is performed.





Interaction of Processes Key


Process	AS Element	KPI (Quality Objectives)
Sales RFQ Quote Contract Review Order Entry	(7.1, 7.2)	1
Purchasing Supplier Approval Purchasing Outsourcing	(4.1, 7.4)	4
Quality Assurance In-Process Inspection Final Inspection Receiving Inspection Outsource Overview Calibration	(4.1, 7.4, 7.5, 7.6, 8.3)	2
Shipping & Receiving	(4.1, 7.4, 7.5, 8.3)	3
Production Distribution Value Added Distribution Manufacturing	(7.1, 7.4, 7.5, 7.6, 8.2, 8.3)	1/2/3/4

Interaction of Processes Key

Process	AS Element	KPI (Quality Objectives)
Management Support Processes	(4.2, 5.1, 5.2, 5.3, 5.4, 5.5, 6.1, 6.2, 6.3, 6.4)	1
Document Control		
Management Responsibility		
Resource Management		
HR		
Infrastructure		
Work Environment		
Continual Improvement	(4.1, 5.4, 5.6, 8.1, 8.2, 8.4, 8.5)	1
Monitoring & Measurement of the QMS		
Management Review		
Quality Objectives / Key Performance Indicators		
Analysis of Data		
Corrective Action		
Preventive Action		

Quality Objectives / KPI


1. Customer satisfaction score of at least 95% as determined by customer survey.
2. RMA for Cause per Line Items Shipped of .5% or less.
3. On-time Delivery of 95% or higher.
4. Supplier Performance of 98% or higher.

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This cross reference guide between AS9100 and Alan Wires AS9100 compliant Quality Management System.


AS9100	Alan Wire QMS
4 Quality Management System	
4.1 General Requirements	QP04-3.0, QP04-3.9, QP05-3.6, QP07-3.57, QP07-3.58
4.2 Documentation Requirements	QP04-3.0
4.2.1 Documentation Requirements-General	QP04-3.x
4.2.2 Documentation Requirements-Quality Manual	QP04-3.1x,
4.2.3 Documentation Requirements – Control of Documents	QP04-3.10<>QP04-3.17
4.2.4 Documentation Requirements – Control of Records	QP04-3.18<>QP04-3.26
5 Managements Responsibility	
5.1 Management Responsibility-Management Commitments	QP05-3.1, QP05-3.2, QP05-3.4<>QP05-3.6, QP05-3.11
5.2 Management Responsibility-Customer Focus	QP05-3.1
5.3 Management Responsibility-Quality Policy	QP05-3.2
5.4 Management Responsibility-Planning	QP05-3.4, QP05-3.5
5.4.1 Management Responsibility-Planning-Quality Objectives	Section .03, QP05-3.4
5.4.2 Management Responsibility-Planning-Quality Management System Planning	QP05-3.6
5.5 Management Responsibility-Responsibility, Authority, and Communication	
5.5.1 Management Responsibility-Responsibility, Authority, and Communication-Responsibility and Authority	QP05-3.7, QP05-3.8
5.5.2 Management Responsibility-Responsibility, Authority, and Communication-Management Representative	QP05-3.9
5.5.3 Management Responsibility-Responsibility, Authority, and Communication-Internal Communication	QP05-3.10
5.6 Management Responsibility-Management Review	QP05-3.1x

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5.6.1 Management Responsibility-Management Review-General	QP05-3.11<>QP053.14
5.6.2 Management Responsibility-Management Review-Review Input	QP05-3.11<>QP05-3.14
5.6.3 Management Responsibility-Management Review-Review Output	QP05-3.11<>QP05-3.14
6 Resource Management	
6.1 Resource Management-Provision of Resources	QP06-2.0
6.2 Resource Management-Human Resources	QP06-3.1<>3.6
6.2.2 Resource Management-Human Resources-Competence, Training, and Awareness	QP06-3.1<>QP06-3.6
6.3 Resource Management-Infrastructure	QP06-3.7, QP06-3.8
6.4 Resource Management-Work Environment	QP06-3.9, QP06-3.10
7 Product Realization	
7.1 Product Realization-Planning of Product Realization	QP07-3.9<>QP07-3.13
7.1.1 Product Realization-Planning of Product Realization-Project Management	QP07-3.14, QP07-3.15
7.1.2 Product Realization-Planning of Product Realization-Risk Management	QP07-3.16 <>QP07-3.18
7.1.3 Product Realization-Planning of Product Realization-Configuration Management	QP07-3.19<>QP07-3.26
7.1.4 Product Realization-Planning of Product Realization – Control of Work Transfers	QP07-3.27, QP07-3.28
7.2 Product Realization-Customer Related Processes	QP07-3.1<>QP07-3.8
7.2.1 Product Realization-Customer Related Processes-Determination of Requirements Related to the Product	QP07-3.3
7.2.2 Product Realization-Customer Related Processes-Review of Requirements Related to the Product	QP07-3.4
7.2.3 Product Realization-Customer Related Processes-Customer Satisfaction	QP08-3.3<>QO08-3.13
7.3 Product Realization-Design and Development	QP07-3.29<>QP07-3.31
7.3.1 Product Realization-Design and Development-Design and Development Planning	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.2 Product Realization-Design and Development-Design and Development Inputs	QP07-3.29<>QP07-3.31

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7.3.3 Product Realization-Design and Development-Design and development Outputs	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.4 Product Realization-Design and Development-Design and Development Review	
7.3.5 Product Realization-Design and Development-Design and Development Verification	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.6 Product Realization-Design and Development-Design and Development Validation	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.6.1 Product Realization-Design and Development-Design and Development Validation-Design and Development Verification and Validation Testing	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.6.2 Product Realization-Design and Development-Design and Development Validation-Design and Development Verification and Validation Documentation	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.3.7 Product Realization-Design and Development-Control of Design and Development Changes	Exclusion per AS9100c-1.2, Section .04 Permissible Exclusions
7.4 Product Realization-Purchasing	
7.4.1 Product Realization-Purchasing-Purchasing Process	QP07-3.60<>QP07-3.67
7.4.2 Product Realization-Purchasing-Purchasing Information	QP07-3.43<>QP07-3.46
7.4.3 Product Realization-Purchasing-Verification of Product Purchased	QP07-3.47<>QP07-3.57
7.5 Product Realization-Production and Service Provision	
7.5.1 Product Realization-Production and Service Provision-Control of Production and Service Provision	QP07-3.60<>QP07-3.67
7.5.1.1 Product Realization-Production and Service Provision-Control of Production and Service Provision-Production Process Verification	QP07-3.68<>QP07-3.70
7.5.1.2 Product Realization-Production and Service Provision-Control of Production and Service Provision-Control of Production Process Changes	QP07-3.71<>QP07-3.73

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7.5.1.3 Product Realization-Production and Service Provision-Control of Production and Service Provision-Control of Production Equipment, Tools, and Software Programs	QP07-3.74<>QP07-3.80
7.5.1.4 Product Realization-Production and Service Provision-Control of Production and Service Provision-Post Delivery Support	QP07-3.81
7.5.2 Product Realization-Production and Service Provision-Validation of Processes for Production and Service Provision	QP07-3.82<>QP07-3.85
7.5.3 Product Realization-Production and Service Provision-Identification and Traceability	QP07-3.89<>QP07-3.97
7.5.4 Product Realization-Production and Service Provision- Customer Property	QP07-3.99<>QP07-3.103
7.5.5 Product Realization-Production and Service Provision- Preservation of Product	QP07-3.104<>QP07-3.112
7.6 Product Realization- Control of Monitoring and Measuring Equipment	QP07-3.113<>QP07-3.125
8 Measurement, Analysis and Improvement	
8.1 Measurement, Analysis, and Improvement-General	QP08-3.10,QP08-3.20
8.2 Measurement, Analysis, and Improvement-Monitoring and Measurement	
8.2.1 Measurement, Analysis, and Improvement-Monitoring and Measurement- Customer Satisfaction	QP08-3.3<>QP08-3.13
8.2.2 Measurement, Analysis, and Improvement-Monitoring and Measurement-Internal Audit	QP08-3.14<>QP08-3.28
8.2.3 Measurement, Analysis, and Improvement-Monitoring and Measurement-Monitoring and Measurement of Processes	QP08-3.29,QP08-3.30
8.2.4 Measurement, Analysis, and Improvement-Monitoring and Measurement-Monitoring and Measurement of Product	QP08-3.31<>QP08-3.42
8.3 Measurement, Analysis, and Improvement-Control of Nonconforming Product	QP08-3.43<>QP08-3.56
8.4 Measurement, Analysis, and Improvement-Monitoring and Measurement-Analysis of Data	QP08-3.57<>QP08-3.63
8.5 Measurement, Analysis, and Improvement-Improvement	

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8.5.1 Measurement, Analysis, and Improvement-Improvement-Continual Improvement	QP08-3.64<>QP08-3.66
8.5.2 Measurement, Analysis, and Improvement-Improvement-Corrective Action	QP08-3.67, QP08-3.68<>QP08-3.80
8.5.3 Measurement, Analysis, and Improvement-Improvement-Preventative Action	QP08-3.67, QP083.81<>QP08-3.88

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QUALITY MANAGEMENT SYSTEM

1.0 PURPOSE AND SCOPE

The procedure described below complies with the requirements of Element 4.0 of AS9100C:2009 and ISO 9001:2008 (both standards hereafter referenced as AS9100C) titled Quality Management System.

2.0 RESPONSIBILITY AND AUTHORITY

The Management Team has the responsibility and authority for implementing all requirements of this procedure. The Management Team is comprised of the President and the Quality Representative.

3.0 PROCEDURE

Quality Manual / General and Documentation Requirements (4.1, 4.2)

- 3.1 The Quality Representative has written a Quality Manual with Supporting Procedures (Quality Manual). The Quality Manual includes the scope of the Quality Management System (QMS), including details of, and justification for, any exclusion.
- 3.2 The Quality Manual contains a description of the interaction between the processes of the Quality Management System (see Appendix B).
- 3.3 Quality planning requirements are addressed as listed in QP05, 3.6.
- 3.4 Quality objectives are an agenda item for Management Review (QP05, 3.11-3.14).
- 3.5 The Quality Management System includes requirements imposed by customer and applicable regulatory authorities. These requirements are addressed within this manual or with supplementary manuals.
- 3.6 The Quality Representative or the President review and evaluate customer and regulatory requirements to ensure control.
- 3.7 Alan Wire employees have access to Quality Management System documentation and are aware of pertinent procedures and are kept abreast of their changes.

- 3.8 Customers and regulatory authorities have access to Quality Management System documentation.

Outsourced Processes (4.1)

- 3.9 Outsourced processes include cabling, etching, laser marking, and jacketing. Outsourced services include calibration, testing, equipment maintenance, QMS consulting, and QMS certification. Outsourcing is controlled through the purchasing process (see QP07-3.58 and QP07 3.59 Outsourced Processes).

Control of Documents (4.2.2, 4.2.3)

- 3.10 The revision status of the Quality Manual can be verified by comparing the revision level or date found in each section's header to the revision level or date listed in the master copy's amendment record. The Quality Representative maintains the master copy and the electronic copy of this Quality Manual.
- 3.11 The Quality Representative maintains the revision history on the amendment record. A controlled circulation list is also maintained.
- 3.12 Quality forms have revision level information, (i.e. a revision level and / or revision date). This revision status is part of the header or footer of the form.
- 3.13 Forms, work instructions, and other documents, including those that are purchased pre-printed, are controlled by maintaining a Master List of Documents. This list details all documents and data and their current revision; only the most current revision shall be used. The Quality Representative or his designee also maintains a Master Document Binder with master copies of all these controlled documents.
- 3.14 The Quality Representative is authorized to approve documents and any changes to them. The President approves documents in the absence of the Quality Representative.
- 3.15 All documents are approved prior to use. All employees are responsible for ensuring that documents remain legible and readily identifiable.
- 3.16 The Quality Representative or designee maintains Obsolete Documents Files to show any changes that have been made to documents. Such retained obsolete documents are segregated and / or marked "OBSOLETE." The Obsolete Documents Files can be hard copy and / or electronic copy.

- 3.17 The Quality Representative is responsible for determining what external documents are necessary for the planning and operation of the Quality Management System and for controlling them. Examples include equipment manuals, external standards, and regulatory manuals. Distribution of these documents is controlled through the use of a Master List of External Documents. Externally supplied specifications and drawings are retained in the sales area.

Control of Records (4.2.4)

- 3.18 All applicable records mandated by AS9100C are maintained. Records are established and maintained to provide evidence of conformity to requirements and of the effective operation of the QMS.
- 3.19 The Record Matrix clearly details which record-keeping requirements are applicable, the record storage locations, and the record retention periods. The listed retention times are the minimum times they are held.
- 3.20 The Administrative Assistant is responsible for the disposal / archiving of records when their retention periods expire.
- 3.21 Hard copies of records are stored in a manner that prevents damage, deterioration, or loss. The preferred storage method involves the use of file cabinets, storage boxes, and either file folders or binders.
- 3.22 All hard copy records are clearly labeled to facilitate identification, indexing, and filing.
- 3.23 All personnel are responsible for ensuring legibility of hard copy records.
- 3.24 Any electronically maintained records are backed up on a regular basis.
- 3.25 Supplier records, such as certificates of compliance, are retained as part of receiving inspection results for 7 years. Suppliers maintain their own inspection records for a period of 7 years as flowed down in Purchase Orders per QP07, 3.45.
- 3.26 Records are available for review by customers and regulatory authorities in accordance with contract or regulatory requirements.

4.0 RELATED DOCUMENTATION

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QUALITY MANAGEMENT
SYSTEM

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QP05 Management Responsibility
QP07 Product Realization
Master List of Documents
Master List of External Documents
Obsolete Documents Files
Record Matrix

MANAGEMENT RESPONSIBILITY

1.0 PURPOSE AND SCOPE

The procedure described below complies with the requirements of Element 5.0 of AS9100C:2009 and ISO 9001:2008 (both standards hereafter referenced as AS9100C) titled Management Responsibility.

2.0 RESPONSIBILITY AND AUTHORITY

The Management Team has the responsibility and authority for implementing all requirements of this procedure. The Management Team is comprised of the President and the Quality Representative.

3.0 PROCEDURE

Customer Focus (5.1, 5.2)

- 3.1 The President ensures that customer requirements are determined and fulfilled with the aim of enhancing customer satisfaction. This is achieved through a combination of careful attention to contract reviews (QP07 3.1 – 3.8), and through collection of customer satisfaction information (QP08 3.3 – 3.13). This is confirmed by tracking customer satisfaction, product quality, and on-time delivery performance. Appropriate action is taken when planned results are not, or will not be, achieved.

Management is committed to the development and implementation of the QMS. Top management will continually improve the effectiveness of the QMS by:

- Establishing the quality policy and ensuring the availability of needed resource.
- Communicating the importance of meeting customer, statutory, and regulatory requirements.
- Ensuring that quality objectives are established and conducting management reviews.

Quality Policy (5.3)

- 3.2 The President has defined and documented the Quality Policy of Alan Wire. The President is responsible for ensuring that the Quality Policy is:

- Appropriate to Alan Wire's purpose.
- Shows commitment to compliance and continual improvement of the Quality Management System.
- Offers a framework for establishment and review of Quality Objectives.

The President has signed the Quality Policy as evidence of review and approval. The Quality Policy is discussed at Management Review to ensure its continuing suitability. The Quality Policy can be found at section 0.3, Quality Policy and Quality Objectives, of this Quality Manual.

- 3.3 The Quality Representative is responsible for ensuring that the Quality Policy is understood, implemented, and maintained at all levels of the organization by distributing it to all employees in hard copy form and / or posting it on bulletin boards.

Quality Objectives / Planning (4.1, 5.4)

- 3.4 Quality Objectives are an agenda item for Management Review. The Quality Representative is responsible for ensuring that the integrity of Alan Wire's Quality Management System is maintained whenever changes to the Quality Objectives are planned and implemented. The Quality Objectives can be found in Section 0.3 of this Quality Manual with the Quality Policy. Quality Objectives may be aligned with Key Performance Indicators (KPI).
- 3.5 Employees are informed of the Quality Objectives as they are developed and implemented. This is achieved through posting of the objectives and discussion with individual employees on their contribution to the objectives.
- 3.6 Quality planning activities happen on a day-to-day basis through discussions, meetings, internal audits, management review, corrective / preventive actions, the contract review process, and other actions. These actions include, as listed in AS9100C Section 4.1, as appropriate:
- Identifying the processes needed for the Quality Management System and their application throughout the organization.
 - Determining the sequence and interaction of these processes.
 - Determining the criteria and methods needed to ensure that both the operation and control of these processes are effective.
 - Ensuring availability of resources and information necessary to support the operation and monitoring of these processes.

- Monitoring, measurement, and analysis of these processes.
- Implementation actions necessary to achieve planned results and continual improvement of these processes.

Responsibility and Authority (5.5.1)

- 3.7 The Quality Representative has compiled an Organization Chart that defines the authority and interrelation of personnel who manage, perform, and verify work affecting quality. See Appendix A of this manual.
- 3.8 Responsibility and Authority are further delineated throughout this Quality Manual, in Job Descriptions, and in other Quality Management System documentation.

Management Representative (5.5.2)

- 3.9 The Quality Representative has been assigned the role of Management Representative for Alan Wire. He is a member of Alan Wire's management. The duties inherent to the role of Management Representative include:
- Ensuring that a Quality Management System is established, implemented, and maintained in accordance with AS9100C. This includes maintenance of this Quality Manual and ensuring that Procedures and Work Instructions are written in a manner consistent with AS9100C.
 - Reporting to management on the performance of the Quality Management System for review and as a basis for improvement.
 - Ensuring awareness of customer requirements throughout Alan Wire.
 - The organizational freedom and unrestricted access to top management to resolve quality management issues.

Internal Communication (5.5.3)

- 3.10 The Management Team is responsible for communicating any necessary Quality Management System information to Alan Wire employees. This is achieved by word-of-mouth, meeting, email, memorandum, or any appropriate medium.

Management Review (5.6)

- 3.11 Management Review is conducted at least four times a year.

3.12 Attendance at Management Review is stipulated and recorded in the agenda / minutes.

3.13 The review is led by the Quality Representative and input for this review includes at minimum the topics listed in AS9100C, Clauses 5.6.1 and 5.6.2. These are:

- Results of audits (Internal Audits, Customer Audits, and Certification Body Audits).
- Customer feedback.
- Process performance and product conformity.
- Status of preventive and corrective actions.
- Follow-up actions from previous management reviews.
- Quality Policy and Quality Objectives.
- Changes that could affect the Quality Management System.

The discussions of the above topics help management to determine the “State of the Quality Management System” and when combined with other topics become the basis for discussion of recommendations for improvement (strategic planning).

The review’s progress is oriented towards the output objectives listed in AS9100C, Clause 5.6.3. These are:

- Improvement of the effectiveness of the Quality Management System and its processes.
- Improvement of product related to customer requirements.
- Identifying new or changing resource needs.

Approved topics of improvement are documented as Action Items.

3.14 Notes are taken of Management Review, retained as Minutes, and made available for review by personnel unable to attend the review. Management Review Minutes will also be available for auditor’s review.

4.0 RELATED DOCUMENTATION



QP05
MANAGEMENT
RESPONSIBILITY

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Revision: B

AS9100C:2009 and ISO 9001:2008 International Standards

QP07 Product Realization

QP08 Measurement, Analysis, and Improvement

Job Descriptions

Key Performance Indicators (KPI)

Management Review Minutes

Organization Chart

Quality Policy

Quality Objectives

RESOURCE MANAGEMENT

1.0 PURPOSE AND SCOPE

The procedure described below complies with the requirements of Element 6.0 of AS9100C:2009 and ISO 9001:2008 (both standards hereafter referenced as AS9100C) titled Resource Management.

2.0 RESPONSIBILITY AND AUTHORITY

The Management Team has the responsibility and authority for implementing and maintaining all requirements of this procedure. The Management Team is comprised of the President and the Quality Representative. The management team is responsible for providing resources to implement, maintain, continually improve the QMS for its effectiveness, and enhance customer satisfaction by meeting customer requirements.

3.0 PROCEDURE

Human Resources (Training) (6.2)

- 3.1 The President has determined the competencies needed to perform work that affects product quality. The needed competencies are recorded on Job Descriptions or a Training Record.
- 3.2 Personnel performing a specific job may be qualified on the basis of appropriate education, training, and / or experience. Pre-qualification is considered at the discretion of management and may vary from case to case.
- 3.3 Newly hired personnel are trained by existing experienced personnel. The selection of the trainer is dependent upon the activity taught.
- 3.4 These training activities are recorded on the Training Record or other appropriate means. If the new employee is considered trained based on past experience, training, education, etc., evidence of such training or experience is filed with the Training Record.
- 3.5 Training records, education records, and experience Records (Resumes, Job Applications) serve as records of competency. The Administrative Assistant maintains these records.

- 3.6 Overall training effectiveness is assessed through annual employee evaluations, the internal audit activities discussed in QP08, 3.14 – 3.28 and through the Management Review process (see QP05, 3.11 – 3.14).
- 3.7 Personnel making quality and MRB decisions are chosen by the president based on education and or experience.

Infrastructure (6.3)

- 3.8 The President has determined the infrastructure necessary for Alan Wire and has taken steps to ensure the infrastructure is achieved and maintained. Infrastructure re-evaluation may occasionally be a topic during Management Review.
- 3.9 Appropriate maintenance records are kept (see **QP07, 3.74 - 3.80** Control of Production Equipment).

Work Environment (6.4)

- 3.10 The President has determined that the work environment for Alan Wire's facility is appropriate to its operations. Should this need to be re-evaluated in the future, the results will be discussed during Management Review and recorded in the minutes.
- 3.11 Factors that may affect the conformity of product may include temperature, humidity, lighting, cleanliness, protection from electrostatic discharge, etc.

4.0 RELATED DOCUMENTATION

AS9100C:2009 and ISO 9001:2008 International Standards
QP07 Product Realization
QP08 Measurement, Analysis, and Improvement
Job Descriptions
Maintenance Records
Management Review Minutes
Training Record

PRODUCT REALIZATION

1.0 PURPOSE AND SCOPE

The procedure described below complies with the requirements of Element 7.0 of AS9100C:2009 and ISO 9001:2008 (both standards hereafter referenced as AS9100C) titled Product Realization.

2.0 RESPONSIBILITY AND AUTHORITY

The Management Team has the responsibility and authority for implementing all requirements of this procedure. The Management Team is comprised of the President and the Quality Representative.

3.0 PROCEDURE

Customer-Related Processes (Contract Review) (7.2)

- 3.1 Alan Wire distributes and manufactures **wire and cable**.
- 3.2 Customer contact is primarily through Inside Sales Personnel. They respond to customer requests for quotes, prepare quotes, and handle customer orders. All contracts are reviewed by the President, Quality Representative, or Administrative Assistant.
- 3.3 Prior to developing a quote, it is confirmed that all required documentation from the customer is present.
- 3.4 Quotes are reviewed prior to presentation to the customer:
 - For completeness.
 - To confirm that the requirements are clear and understood.
 - To determine any special requirements.
 - To confirm that the order can be met.
 - To assess risks (see Risk Management 3.16 to 3.18 below).
- 3.5 Product planning activity may be needed to prepare quotes.

- 3.6 Customer orders that are derived from prior quotes are reviewed to confirm they match the quote. Before making a commitment to supply, quotes are developed for all customer orders that do not have prior quote activity.
- 3.7 Customer Purchase Orders initiate Traveler generation.
- 3.8 Customer Purchase Orders initiate confirmation of available parts and materials and trigger purchasing activity.

Planning of Product Realization (7.1)

- 3.9 The Traveler is the primary planning document for production. The Traveler includes the sequence of the operations to be performed and details about the configuration of the product. The Traveler includes needed information including such things as routing, stages of production, inspection points, and work instructions. A copy of the Customer Order and Drawings may accompany the Traveler.
- 3.10 Generation of a Traveler provides planning for product realization, including both distributing and manufacturing. A manufacturing Traveler provides routing information as well as manufacturing information. A distributing Traveler is used as a pick list to fill the order.
- 3.11 The Traveler may initiate purchasing activity.
- 3.12 Production planning also considers:
 - Product and personal safety.
 - Reliability, availability, and maintainability.
 - Producibility and inspectibility.
 - Suitability of parts and materials used in the product.
 - Configuration Management appropriate to the product.
 - Resources to support the use and maintenance of the product.
- 3.13 Also see 3.14 – 3.28 below for additional production planning considerations.

Project Management (7.1.1)

- 3.14 Project Management is facilitated by development of the Traveler. This provides structured planning and control of production. Project Management also considers acceptable risk, resource, and schedule constraints.

- 3.15 As needed, members of the Management Team gather for production and purchasing meetings to keep the staff aware of production schedules. These meetings may also address material shortages.

Risk Management (7.1.2)

- 3.16 The Management Team is jointly responsible for assuring all risks are identified and managed to achieve applicable requirements for the product.
- 3.17 A Risk Assessment Checklist is completed for each significantly different product or new customer. Risk assessment addresses:
- Identification of risk and definition of risk criteria.
 - Assessment and communication of risk throughout the product realization.
 - The identification, implementation and management of actions to mitigate risks that exceed the defined risk acceptance criteria.
- 3.18 The Risk Assessment Checklist is signed off by the President or **Management Representative** acknowledging the acceptance of risks remaining.

Configuration Management (7.1.3)

- 3.19 The practice of configuration management ensures that the agreed configuration matches the actual configuration of product produced.
- 3.20 Configuration management planning is accomplished along with production planning through the development of the Traveler. The Traveler includes the revision level that the part is to be built to. If drawings are included with the Job Traveler, the revision level on the drawing and the Traveler are reconciled.
- 3.21 The Traveler serves as configuration identification during manufacturing.
- 3.22 Configuration change is managed by the Quality Representative. Revision level is coordinated on all pertinent documents and it is confirmed that the changes have taken place.
- 3.23 When a configuration change occurs after production has started, production is placed on hold until the new information is evaluated and accommodated.
- 3.24 Records accumulated during manufacturing demonstrate that the configuration management process is efficient.

- 3.25 Configuration audit is accomplished by confirming every configuration requirement is verified for completion and acceptability against customer requirements. Typically, the following are verified:
- All production processes were completed.
 - All certifications have correct process revisions.
 - All dimensions have been inspected and approved.
 - All proper stamps are in place.
 - All documents supporting its configuration are present.
- 3.26 Configuration audit is performed by the Production Lead or the Administrative Assistant and typically takes place at or immediately following final inspection. A Traveler sign-off provides evidence of configuration audit completion.

Control of Work Transfers (7.1.4)

- 3.27 All work transferred outside the facility for any reason, or from one supplier to another, is approved jointly by the Management Team, and has identifying documentation such as Job Travelers, Purchase Orders, Certificates of Conformance, or storage identification. Processes are defined for control and validation of work quality.
- 3.28 Alan Wire is responsible for the conformity of the work requirements and all products are inspected and / or verified upon receipt back from storage, outside processing, or suppliers. The President is responsible for assuring product meets conformity requirements. Where deemed necessary, arrangements for quality inspection and / or verification at the supplier's premises are the responsibility of the President.

Design and Development (7.3)

- 3.29 Alan Wire is a Partial Design company. When conflicts in customer specifications are identified or when deemed that improvements can be made, suggestions are made that may become part of customer's Design Inputs.
- 3.30 Alan Wire's involvement with Design Review occurs during Contract Review when gathering requirements and confirming the ability to meet the order. Inside Sales Personnel review the requirements to determine all are present and they fully understand what the customer wants.

- 3.31 Alan Wire's involvement with customer's Design Inputs is when these suggestions for improvement are communicated to customers. Email of the suggestions is retained as a record of the potential Design Inputs.

Supplier Evaluation (7.4.1)

- 3.32 Suppliers that have already proven their ability to meet our needs prior to implementation of this Quality Management System have been grandfathered. A list of the grandfathered suppliers is retained.
- 3.33 Alan Wire shall ensure that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product shall be dependent upon the effect of the purchased product on subsequent product realization or the final product.
- 3.34 All other suppliers are approved by the evaluation of a Supplier Survey, Site Survey, Trial Buy, or any combination of the three as deemed appropriate by the President or Quality Representative.
- 3.35 The risk of using a supplier is part of the consideration in determining approval.
- 3.36 The method of approval is recorded on the Supplier Survey.
- 3.37 The President has the authority to disapprove the use of suppliers.
- 3.38 Alan Wire is responsible for the quality of all products purchased from suppliers, including sources designated by the customer.
- 3.39 An Approved Supplier List (ASL) and supporting records are maintained. The ASL includes the scope of approval and the approval status. The ASL may include supplier delegations.
- 3.40 The ability of suppliers to meet Alan Wire's criteria is constantly re-evaluated through attention to supplier on-time delivery and supplier accuracy. Evaluation is performed on a continual basis.
- 3.41 As a means of determining and managing the risk of the continued use of suppliers, the Management Team reviews suppliers identified as problematic and take appropriate action. Appropriate actions may include probation, tighter control of purchased product, removal, or suspension of the use of the supplier.

- 3.42 When required, customer-approved sources are used for special processes and the need for their use is flowed down the supply chain.

Purchasing (7.4.2)

- 3.43 The need to order material is triggered by inventory levels.

- 3.44 Purchasing activity is usually handled by the President.

- 3.45 Purchase information describes the product to be purchased, including appropriate detail to help ensure that purchased product and services meet purchase requirements. The information may include as necessary:

- Requirements for approval of product, procedures, processes, and equipment.
- Requirements for qualification of personnel.
- Quality management system requirements.
- The name or other positive identification.
- The identification and revision status of specifications, drawings, process requirements, inspection / verification instructions, and other relevant technical data.
- Requirements for:
 - Design.
 - Test.
 - Inspection.
 - Verification (including production process verification).
 - Use of statistical techniques for product acceptance, and related instructions for acceptance by the organization.
 - Critical items including key characteristics.
- Requirements for test specimens (e.g. production method, number, storage conditions) for design approval, inspection, investigation or auditing.
- Requirements regarding the need for the supplier to:
 - Notify of nonconforming product.
 - Obtain Alan Wire's approval for nonconforming product disposition.

- Notify Alan Wire of changes in product and / or process, changes of suppliers, changes of manufacturing facility locations, and where required, obtain Alan Wire's approval.
 - Flow down to the supply chain the applicable requirements, including customer requirements.
 - Records are to be maintained for 7 years.
 - The customer, customer representative, or recognized third party has right of access for customer, and regulatory authorities to all facilities involved in the order and to all applicable records for verification purposes.
 - Intended verification arrangements and method of product release when verification activity is performed by Alan Wire or its customer at supplier's premises.
 - Other information required by contract.
- 3.46 Purchase Orders are reviewed by the originator prior to submission to suppliers to ensure adequacy.

Verification of Purchased Product (Receiving Inspection) (7.4.3)

- 3.47 Alan Wire is responsible for all products purchased from suppliers, including sources designated by the customer. Customer verification activities at any level of the supply chain are not used as evidence of effective control of quality.
- 3.48 Verification activities may include:
- Obtaining objective evidence of the conformity of the product from the supplier (certificates of conformance, certificates of analysis, test records, statistical records, process control records, etc.).
 - Inspection and audit at the supplier's premises.
 - Review of the required documents.
 - Inspection of products upon receipt.
 - Delegation of verification to the supplier or supplier certification.
- 3.49 Products are received through the receiving area. A visual inspection is made by Shipping & Receiving Personnel of all items at the time of delivery for physical condition and correct count as shown on any shipping paperwork from the supplier.

- 3.50 All received products and services are reviewed against the Purchase Order to confirm that the order matches.
- 3.51 Shipping & Receiving Personnel review any objective evidence of product conformity from the supplier and inspects all received products to ensure it matches requirements. This may include certificates of conformity, certificates of analysis, test reports, statistical records, and process control records.
- 3.52 When additional inspection is required it is sent to the Production Lead or the Quality Representative for additional inspection.
- 3.53 All shipping paperwork is initialed or stamped as to who received and accepted the shipment as conforming.
- 3.54 The Administrative Assistant interfaces with suppliers concerning improper quantities, incorrect materials discovered during initial receiving inspection, incorrect materials not found until later, and any concealed damage. Corrective action is required from the supplier where appropriate.
- 3.55 Purchased product is not used or processed until it has been confirmed as conforming to specified requirements unless it is released under controlled conditions. This control includes segregating and preventing distribution of product using unapproved components until approval is obtained.
- 3.56 Independent validation of raw material is performed when required by the customer. Additional independent validation may be performed when deemed appropriate.
- 3.57 When verification activities have been assigned to the supplier, the requirements of the verification activities are defined on the purchase order, and a list of them is retained. This may be included as part of the Approved Supplier List (ASL).

Outsourced Processes (4.1)

- 3.58 Outsourced processes include cabling, etching, laser marking, and jacketing. Outsourced services include calibration, testing, equipment maintenance, QMS consulting, and QMS certification.
- 3.59 Outsourcing is controlled through the purchasing process. Purchase Orders for outsourcing clearly describe or reference the work to be done and any needed specifications. Confirmation that the requirements have been met is by review of any required documentation and any required additional testing or

inspection (see 3.47 – 3.57 above). Product outsourcing is defined on the Traveler. Incoming verification results are recorded on the Traveler. Validation results (Certificates of Conformance, Inspection Reports, etc.) are filed and become part of the Traveler record.

Control of Production (7.5.1)

- 3.60 The primary production control document is the Traveler. Travelers are used for both distributing and manufacturing. Other production control documents may accompany the Traveler. Travelers and the accompanying documents provide details about how the product is to be distributed or manufactured.
- 3.61 Needed work instructions are included in the Traveler. Needed specifications are either included or referenced on the Traveler and are readily available.
- 3.62 All stages of production are tracked with Travelers, and are used to record successful completion and associated inspections of those stages.
- 3.63 The use of Travelers ensures accountability for all product used during manufacturing including part quantities, split orders, and nonconforming product. Each step is stamped or initialed by the responsible party.
- 3.64 Maintaining clean work areas, controlling food in the work area, and keeping lids on beverages, are practiced to facilitate foreign object prevention.
- 3.65 Foreign object detection and removal is part of the inspection processes.
- 3.66 When criteria for workmanship are needed, they are stated in the clearest practical manner with written standards, representative samples, or illustrations.
- 3.67 As applicable, production planning considers:
- The use, availability, and implementation of suitable equipment including monitoring and measuring equipment.
 - Establishing, implementing, and maintaining appropriate process controls to manage critical items, especially where key characteristics have been identified.
 - The design, manufacture, and use of tooling so that variable measurements can be taken, particularly for key characteristics.
 - The identification of in-process verification points when adequate verification cannot be performed at a later stage of production.

- Special processes.

Production Process Verification (First Article Inspection) (7.5.1.1)

- 3.68 First Article Inspection is performed on a representative sample from the first production run of a new part, or following any subsequent change that invalidates the previous first article results. Things that may invalidate an earlier First Article Inspection include changes in:
- Engineering.
 - Production processes.
 - Production Documentation.
 - Tooling.
- 3.69 The AS9102 Aerospace First Article Inspection Requirement is available for guidance. First article inspections are recorded on the First Article Inspection Report. Customer specific First Article Inspection Forms are used when required.
- 3.70 Production operations are carried out in accordance with approved data. The approved data contains as necessary, product drawings, parts lists, process flow charts including inspection operations, production documents , and a list of specific tools required for any specific instructions.

Control of Production Process Changes (7.5.1.2)

- 3.71 The Quality Representative is authorized to make changes in production processes. When required, customer acceptance of these changes is obtained. All such changes are documented on the Traveler.
- 3.72 The results of change to production processes are evaluated by the Quality Representative, to confirm that the desired effect has been achieved without adverse effects to product quality. Notes of the evaluation are kept on the Traveler. Procedures are available to control implementation.
- 3.73 Any outside processing steps to be completed are also listed on the Traveler. When products are sent out to be processed (including work temporarily transferred outside), a Purchase Order and, if needed, a copy of any needed specifications are sent with them. When these items are returned from the supplier, an evaluation is performed and recorded on the Traveler. Also see Control of Work Transfers (3.27 – 3.28) above and Outsourced Processes (3.58 – 3.59) above.

Control of Production Equipment, Tools, and Software Programs (7.5.1.3)

- 3.74 Production equipment, tools, and software programs are validated prior to use. Validation prior to production includes verification of the first article produced to the design specifications (see Control of Production Process Changes 3.71 – 3.73) above.
- 3.75 Preventive maintenance is performed on equipment that lends itself to preventive maintenance, depending on their individual needs.
- 3.76 Qualified Alan Wire employees perform preventive maintenance as appropriate using established schedules.
- 3.77 Records of preventive maintenance are filed, and are traceable from an equipment description, machine number, model number, and / or serial number as appropriate.
- 3.78 Preventive maintenance is also performed by qualified outside sources as needed. Records of this outside maintenance are maintained.
- 3.79 Production equipment in storage is kept indoors and further protected from adverse environment as needed (covers, location, etc.). Condition of stored equipment is periodically checked for overall condition. When removed from storage, production equipment is fully evaluated to determine that it is still suitable for use. Any needed maintenance or repairs are performed prior to returning to use.
- 3.80 At this time there are no tools or software programs that need validation prior to use. If this changes in the future, the means of validation will be determined and put into practice.

Post-Delivery Support (7.5.1.4)

- 3.81 Post-delivery support is provided when appropriate. The Quality Representative:
- Determines actions to be taken, including investigation and reporting, when problems are detected after delivery.
 - Maintains and updates technical documentation to retain control.
 - Uses approved and controlled repair schemes, including technical manuals.

Validation of “Special Processes” (7.5.2)

- 3.82 Special processes are those where the resulting output cannot be verified by subsequent monitoring and measurement. This would include product for which the quality cannot be verified without destructive testing, rendering the product unsuitable for use. As a consequence, deficiencies may not become apparent until the product has been placed into use.
- 3.83 Wire striping and wire printing are special processes that are performed at Alan Wire. The bonding of the stripe and printing is validated by destructive testing of a sample.
- 3.84 Control of this special process is from following and monitoring established specifications (or recipes) as well as the use of qualified personnel and approval of equipment.
- 3.85 Records of the results of wire striping and printing destructive testing are retained on Certificates of Conformance.

Repair and Rework ()

- 3.86 Repair and/or rework may be considered for non-conforming material at the approval of Quality Management.
- 3.87 Material must be reworked/repared in accordance with all applicable specifications and pass all applicable conformance tests.
- 3.88 Quality Management has final approval on acceptance of material.

Identification and Traceability (7.5.3)

- 3.89 Production consumables are generally retained with whatever packaging / labeling furnished by the supplier. When received with inadequate labeling, additional labeling is provided once accurate identification is determined. Identification is flowed down to the supplier on the purchase order when appropriate.
- 3.90 Certificates of conformance and certificates of analysis are filed to ensure material traceability.

- 3.91 Materials sent in by the customer for use in production are identified on the Traveler when received.
- 3.92 Re-spooled wire is immediately labeled to ensure continued traceability.
- 3.93 Identification of product being prepared for shipment is by applicable shipping documentation and labeling. This is dictated by the customer or follows best practice.
- 3.94 The production stage can always be determined through a review of the Traveler and what stages have been signed off.
- 3.95 Nonconforming material is identified in accordance with Control of Nonconforming Product, QP08, 3.43 – 3.56.
- 3.96 Product configuration (revision level) is tracked on the Traveler to ensure that the actual configuration matches the agreed configuration.
- 3.97 When required, traceability may be facilitated by:
- The use of serial numbers.
 - The use of lot or batch numbers.
 - Tracking all materials from a manufacturing batch so they are traceable to others in the same batch as well as to the destination (delivery, scrap).
 - Maintaining a sequential record of production of any given product on the Traveler.
 - The traceability of a given product will be done with a unique identifier and will be maintained throughout delivery and product life. (As specified by product specification and customer requirements.)

Acceptance Authority Media Control (7.5.3)

- 3.98 Inspection stamps are controlled using a stamp log. Retired stamps are not reassigned. The log and unassigned stamps are maintained by the Quality Representative. Each stamp holder is responsible for preventing its unauthorized use.

Customer Property (7.5.4)

3.99 There are three instances of customer property at Alan Wire. These are:

- Items or materials that are sent in to be included in production processing.
- Items returned by customers as possible warranty issues.
- Intellectual property, such as drawings and other customer furnished data used for production and / or inspection.

3.100 Customer-supplied constituent components and materials are tracked with the Traveler. Alan Wire exercises care for a customer's property while under Alan Wire control.

3.101 Items returned by customers for possible warranty issues are tracked with a Returned Material Authorization (RMA).

3.102 Intellectual customer property may accompany the Traveler during production and is filed in the office area.

3.103 The President has ultimate responsibility for communicating to the customer about any loss or damage to customer property. When this occurs, records are maintained on a **Damaged Customer Property Report (DCPR)**.

Preservation of Product (7.5.5)

3.104 All employees are responsible for ensuring product conformity during internal processing and delivery to the customer. This includes all aspects of identification (detailed above), handling, packaging, storage, and protection. Further details of these are explained below.

3.105 Constituent components and materials used in production are generally retained with whatever packaging and / or labeling they arrive with. When necessary, they may be repackaged and / or relabeled for storage.

3.106 Customers may require special protective packaging for finished product. Alan Wire's personnel are responsible for using customer-specified special packaging to ensure protection of the product during shipping. If there are no customer packaging requirements, best practice methods are employed.

- 3.107 Delivery arrangements are made during the order phase or when the job is ready to be shipped, and may be noted on the Traveler. Alan Wire personnel are to ensure that documents required in the order are included in delivery and protected from loss and damage.
- 3.108 Preservation of product includes appropriate cleaning. Production and Shipping personnel are responsible to perform a visual inspection to determine:
- All product is free from foreign material, debris and contaminants on all part surfaces.
 - Fluids, liquids and preservatives used by suppliers on parts and / or material are cleaned from surfaces during production, as applicable.
 - Cleaning needs.
- 3.109 Prevention, detection, and removal of foreign objects (FOD):
- Work areas are kept clean.
 - Food in the work area is controlled to keep it out of the product.
 - Beverages in the work area require containers with lids.
 - Inspection includes looking for foreign objects.
 - Any foreign objects found are immediately removed.
- 3.110 Shelf life is controlled by buying reasonable quantities of shelf life sensitive materials and closely watching to confirm that they are not used after the expiration date.
- Shelf life sensitive items that are not dated by the manufacturer are investigated to see if a shelf life can be determined. If determined, it is so marked. If no clear determination can be made, they are marked with a one or two year expiration date. The item may then be re-investigated to determine if this shelf life was accurate and appropriate.
 - The Quality Representative monitors shelf life sensitive materials.
 - Any finished good that has been in storage is inspected prior to shipment to confirm that it is suitable for use.
 - Alan Wire follows First In First Out (FIFO) practices and principles.
- 3.111 Hazardous materials used during production are kept in appropriate fire-proof containers and lockers.

- 3.112 Employees are trained in handling sensitive products that require special attention.

Control of Monitoring and Measurement Equipment (7.6)

- 3.113 The Quality Representative is responsible for ensuring that monitoring and measuring equipment (MME) are used in a manner that ensures consistency with the required measurement capability. MME is also sometimes referred to as “calibrated equipment”. It is the Quality Representatives responsibility to assess and record the validity of previous measuring results if and when a MME is found to be out of calibration.
- 3.114 All MME are calibrated / verified against certified equipment having a known valid relationship to internationally or nationally recognized standards.
- 3.115 MME is calibrated by qualified NIST traceable 3rd party that meets all calibration requirements.
- 3.116 The Quality Representative maintains a Calibration Log that includes a listing of the MME, the calibration date, the calibration due date, equipment type, unique identification, location, and frequency of checks. The check method and acceptance criteria are included with individual calibration records. Calibration records include certificates from outside calibration companies.
- 3.117 All employees are responsible for using MME in a manner that ensures that it is consistent with the required measurement capability and is protected from damage or deterioration during handling, maintenance, and storage. Any damages must immediately be reported to the Quality Representative.
- 3.118 All calibrated MME is labeled with a calibration sticker or tag which shows the last inspection date, the next inspection date, and who last calibrated the device. When the MME doesn't lend itself to using a sticker or tag, affixing the sticker or tag to the storage container is appropriate as long as the storage container is kept in close proximity.
- 3.119 All employees are responsible to confirm current calibration status of any MME prior to each use (that is to check the calibration sticker to make sure it has not expired). Employees may not adjust calibration. This is to ensure and protect against invalidation.
- 3.120 Any MME found to be out of calibration are re-calibrated as soon as possible, and is not used until calibration has been confirmed. The Quality Representative attempts to assess if any measurements have been made with

this out-of-calibration MME. Customers are notified if any inaccurate measurements affecting their product might have been made.

- 3.121 MME are maintained and stored in such a way that its fitness for use is ensured.
- 3.122 All employees are responsible for ensuring that the handling, preservation, and storage of MME are such that the accuracy and fitness for use are maintained. All employees take care to handle the MME carefully and make sure that it is used only for the intended purposes.
- 3.123 All employees are responsible for safeguarding the MME from adjustments that would invalidate the calibration setting.
- 3.124 MME is not used or calibrated unless environmental conditions are suitable for the activity involved. Alan Wire uses a 3rd party certified calibrator that meets applicable requirements.
- 3.125 Recall of MME due for calibration is from calibration is the responsibility of the Quality Representative.

4.0 RELATED DOCUMENTATION

AS9100C:2009 and ISO 9001:2008 International Standards
AS9102 Aerospace First Article Inspection Requirement
QP08 Measurement, Analysis, and Improvement
Approved Supplier List (ASL)
Calibration Log
Certificates of Conformance
Customer Purchase Order
Damaged Customer Property Report
First Article Inspection Report
Internal Corrective Action Report (ICAR)
Quotes
Returned Material Authorization (RMA)
Risk Assessment Checklist
Sales Order
Supplier Survey
Traveler
Work Instructions

MEASUREMENT, ANALYSIS, AND IMPROVEMENT

1.0 PURPOSE AND SCOPE

The procedure described below complies with the requirements of Element 8.0 of AS9100C:2009 and ISO 9001:2008 (both standards hereafter referenced as AS9100C) titled Measurement, Analysis, and Improvement.

2.0 RESPONSIBILITY AND AUTHORITY

The Management Team has the responsibility and authority for implementing all requirements of this procedure. The Management Team is comprised of the President and the Quality Representative.

3.0 PROCEDURE

Use of Monitoring, Measurement, Analysis, and Improvement (8.1)

- 3.1 Monitoring, measurement, analysis, and improvement is performed to demonstrate conformity of product, ensure conformity of the quality management system, and to continually improve the effectiveness of the quality management system. This includes determination of applicable methods, including statistical techniques.
- 3.2 Statistical techniques may be used to support:
- Process control, including statistical process control.
 - Selection and inspection of key characteristics.
 - Process capability measurements.
 - Design of experiment.
 - Inspection.
 - Failure mode and effect analysis (FMEA).
 - Matching sampling rate to the criticality of the product and to the process capability.

Customer Satisfaction (8.2.1)

- 3.3 Alan Wire actively monitors customer satisfaction through the use of a Customer Satisfaction Survey.

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- 3.4 The survey template is reviewed at least annually, usually during Management Review, to ensure appropriateness.
- 3.5 These customer satisfaction surveys are administered by the Administrative Assistant and evaluated by the President at least once a year.
- 3.6 Customers may be evaluated more often if they conduct more frequent business with Alan Wire or demonstrate an unfavorable opinion on a survey.
- 3.7 Additional information monitored for the evaluation of customer satisfaction includes:
- Product Conformity.
 - On-time Delivery Performance.
 - Customer Complaints.
 - Corrective Action Requests.
- 3.8 Product Conformance and On-Time Delivery are part of the Quality Objectives / Key Performance Indicators.
- 3.9 Customer Complaints are tracked with the Corrective Action process.
- 3.10 Corrective Action Requests from customers are tracked on the CAR Log.
- 3.11 Other sources for Customer Satisfaction information may include customer report cards, user opinion surveys, lost business analysis, compliments, and warranty claims.
- 3.12 Any information pertinent to customer satisfaction is discussed during Management Review.
- 3.13 Any actions taken in relation to customer satisfaction data will be noted in the Management Review Minutes.

Internal Audit (8.2.2)

- 3.14 The Quality Representative schedules internal audits on the basis of the status and importance of the activity to be audited. The internal audit frequency may be increased based on results of previous internal audits and / or certification

body audits. The audit schedule is a working document that is updated as necessary.

- 3.15 The Quality Representative ensures that all quality management system processes and all elements of AS9100C are audited at least once a year.
- 3.16 The Quality Representative assures that internal audit planning includes allowance for meeting contract and / or regulatory requirements by informing the internal auditor of any such requirements.
- 3.17 All internal auditors have been trained in the AS9100C standard and are knowledgeable of Alan Wire's operations and auditing. A properly credentialed contract auditor may also be used.
- 3.18 Auditors gather objective evidence through interviewing employees, reviewing documents, reviewing records, and observing activities / processes.
- 3.19 In scheduling internal audits, the Quality Representative ensures that personnel independent and impartial of those having direct responsibility for the activity being audited carry out the audits. Auditors may not audit their own work.
- 3.20 An audit plan is drafted for each audit. The audit plan includes the scope of the audit and audit objectives.
- 3.21 The Quality Representative conducts an opening and a closing meeting.
- 3.22 The internal audit is conducted by auditing the processes of Alan Wire, in keeping with ISO 19011:2004 guidelines. The Quality Representative provides an Internal Audit Working Document to record the audit findings.
- 3.23 At the conclusion of the audit, the auditor presents any and all nonconformities to the Quality Representative for acknowledgement. These are recorded using an Internal Corrective Action Report (ICAR). The Quality Representative also logs the nonconformities in the CAR Log.
- 3.24 The manager over the area of the audit finding moves to resolve the non-conformance without undue delay. He determines the appropriate correction, root cause, and corrective action.
- 3.25 The Quality Representative periodically reviews the CAR Log to ensure that all audit findings are resolved in a timely manner.

- 3.26 When resolved, the Quality Representative verifies the effectiveness of the implemented Corrective Action. Follow-up activities are recorded on the Internal Corrective Action Report.
- 3.27 To complete the closeout process, the Quality Representative enters the closeout date in the CAR Log.
- 3.28 The Management Team reviews the results of all internal audits at the next Management Review to evaluate the effectiveness of the audit.

Monitoring and Measurement of Process (8.2.3)

- 3.29 Monitoring of Quality Management System processes is achieved primarily through the tracking of Key Performance Indicators (KPI). Internal audit and management review activities also aid in monitoring the processes of the Quality Management System.
- 3.30 In the event of process nonconformities, the Quality Representative:
- Determines the action to correct the nonconforming process.
 - Determines if the process nonconformity has resulted in product nonconformity.
 - Determines if the process nonconformity is limited to a specific case or whether it could have affected other processes or products.
 - Identifies and controls the nonconforming product according to Control of Nonconforming Product below (3.43 – 3.56)

Monitoring and Measurement of Product (8.2.4)

- 3.31 Travelers are used to show the successful completion of production steps as they occur.
- 3.32 Identified critical items including key characteristics are recorded on the Traveler so they can be monitored and controlled.
- 3.33 In-process and final inspection is performed as specified and recorded on the Traveler and accompanying Inspection Records. Final inspection is performed on all products.
- 3.34 Measurement requirements for product acceptance are documented on the Traveler. Inspection documentation includes:

- Criteria of acceptance and / or rejection.
 - Where in the sequence measurement and testing operations are performed.
 - A record of the results (recorded on the Traveler).
 - The type of measurement instruments required with access to instructions associated with their use if needed.
- 3.35 Identified critical items, including key characteristics, are recorded on the Traveler so they can be monitored and controlled.
- 3.36 Statistically valid sampling plans are employed when sampling is performed. Sampling plans are selected based on criticality of the product and to the process capability. Customers approve sampling plans when required.
- 3.37 Product is not released for use until it has been inspected or otherwise verified as conforming to specified requirements unless it is positively controlled to facilitate recall if needed. This entails maintaining positive control of all production involved prior to verification that the constituent parts are conforming.
- 3.38 Sign-offs on the Traveler show who authorized the product for delivery to the customer.
- 3.39 Inspection and test records provide evidence that the product meets defined requirements.
- 3.40 Product is not released for use until planned arrangements have been completed, unless a waiver is obtained from the customer or a relevant authority.
- 3.41 Documents required to be with the product at time of delivery are properly protected using weatherproof pouches and packaged inside the shipping containers with the product.
- 3.42 The President and Quality Representative ensure monitoring of product by tracking warranty returns. They also review Travelers to capture abnormalities.

Control of Nonconforming Product (8.3)

- 3.43 All incoming product, including product returned from customers, is visually inspected. If anything is found to be incorrect, broken, or damaged, it is

immediately identified and segregated to a hold area. A Discrepant Material Report (DMR) is initiated and the DMR is logged on the DMR Log.

Conformance (acceptance) is recorded in the receiving log. Nonconforming product located on the shop floor must have a hold for inspection or a nonconformance sticker. It must also be reasonably separated from conforming material until it is inspected and quarantined.

- 3.44 If the product nonconformance occurs during internal handling, storage, etc., a DMR is initiated to record the discrepancy. This form lists the supplier involved, the part number(s), description of the problem, etc.
- 3.45 When appropriate, the DMR is used to generate an Internal Corrective Action Report (ICAR). The ICAR is used to evaluate root cause, assign responsibility for correction, final dispositions, and all appropriate approvals.
- 3.46 At the Quality Representative's discretion, a Supplier Corrective Action Report (SCAR) may be issued for the supplier to respond on how they will correct the problem. SCARs are tracked on the CAR Log.
- 3.47 A Returned Material Authorization (RMA) is used to record product returned by a customer for issues of nonconformance. An RMA may be escalated to an ICAR when deemed appropriate by the Quality Representative or President.
- 3.48 An ICAR issued for DMR and RMA activity, as with other CARs, attempts to detect the root cause of the nonconformity. For a full explanation of the corrective action process, please see clauses 3.68 – 3.80 entitled "Corrective Action" below.
- 3.49 Disposition of all nonconforming material is determined by the Quality Representative.
- 3.50 The Quality Representative evaluates the nature and extent of nonconforming material and issues corrective action or additional investigation where deemed necessary.
- 3.51 Nonconforming product disposition of "use-as-is" or "repair" is not used without customer concession.
- 3.52 When delivered nonconforming product that affects reliability or safety is discovered, the customer and any pertinent regulatory authority are immediately notified. The notification is written with a clear description of the non-conformity, including parts affected, part numbers, quantities, and dates delivered.

- 3.53 Parties requiring notification of nonconforming product may also include suppliers, internal organizations, distributors, and regulatory bodies.
- 3.54 The Quality Representative confirms that the effects of identified nonconformities on other processes or products are determined and contained.
- 3.55 Product dispositioned for scrap is conspicuously marked, or positively controlled, until rendered unusable. A quarantine area is available when required or otherwise appropriate.
- 3.56 When nonconforming product is corrected, it is returned to the inspection stage where the problem was identified for re-verification to demonstrate it is now conforming to requirements.

Analysis of Data (8.4)

- 3.57 Alan Wire collects and analyzes data to determine the suitability and effectiveness of the Quality Management System and to identify improvements that can be made. Items selected for analysis of data may be aligned with Quality Objectives and Key Performance Indicators.
- 3.58 Data is analyzed to provide information on the following:
- Customer satisfaction.
 - Conformance to customer requirements.
 - Characteristics of processes, product, and their trends.
 - Suppliers.
- 3.59 Customer satisfaction is monitored by tracking results of customer satisfaction surveys.
- 3.60 Product quality is monitored by tracking the RMA for cause rate.
- 3.61 Overall evaluation of processes is determined by monitoring On-time Delivery.
- 3.62 Suppliers are monitored by tracking supplier performance.
- 3.63 All instances of data analysis for these topics are utilized as part of Management Review.

Continual Improvement (8.5.1)

3.64 Continual improvement of the Quality Management System is monitored and their effectiveness evaluated and addressed via each Management Review and via facilitation of, or response to, the following:

- Quality policy.
- Quality objectives.
- Audit results (internal, customer, and certification body).
- Analysis of data.
- Corrective and preventive action.
- Customer complaints.
- Supplier monitoring.
- Management Review.

3.65 Continual improvement opportunities can also be results from lessons learned, problem resolutions, and the benchmarking of best practices.

3.66 Progress towards continual improvement goals (specifically Quality Objectives / Key Performance Indicators) is recorded in the Management Review Minutes.

Corrective and Preventive Action (8.5.2, 8.5.3)

3.67 It is important to understand the difference between Corrective Actions and Preventive Actions. Corrective Actions are to prevent recurrence of a problem and are reactive in nature. Preventive Actions are to prevent occurrence of a potential problem and are more proactive in nature.

Corrective Action (8.5.2)

3.68 The Internal Corrective Action Report (ICAR) is used to document customer complaints and internal reports of product nonconformities. Anyone is authorized to initiate these reports. The Quality Representative assigns the ICAR to the manager or supervisor of the area of the nonconformity. This party is responsible for effectively handling the nonconforming product / situation. This could include the tagging and segregation of nonconforming material or notifying the personnel with authority to implement an appropriate short-term fix to the customer's complaint.

- 3.69 If the root cause of the concern involves a supplier, the Quality Representative initiates a Supplier Corrective Action Report (SCAR) to the supplier for the supplier to respond with how they will create a permanent cure.
- 3.70 All CARs (ICAR and SCAR) are logged into the CAR Log, which is maintained by the Quality Representative.
- 3.71 An immediate correction or containment takes place to ensure that no product or process associated with the nonconformity is used. Please see the definitions of “correction” and “corrective action” in the Glossary (section 0.5).
- 3.72 If the ICAR was written against Alan Wire (derived from a customer complaint, RMA, or internal DMR), the Quality Representative is responsible for making sure the root cause or causes are determined and a suitable long-term corrective action has been applied.
- 3.73 The individual doing the root cause analysis also records the corrective action to be taken. The corrective action includes a long-term fix of the problem and proposed measures to prevent recurrence.
- 3.74 Once the individual responsible for implementation of the corrective action has completed it, he submits the CAR to the Quality Representative who may involve the initiator for verification.
- 3.75 The Quality Representative periodically reviews the CAR Log in order to ensure that all corrective actions are completed in a timely manner.
- 3.76 The Quality Representative investigates all CARs that have not been completed within 30 days to determine if there is good cause for them to remain open. If there is not good cause, additional resources are applied as needed to bring the corrective action to a proper close.
- 3.77 If the Quality Representative finds the corrective action is acceptable, he will document the actions and sign the CAR. Any unacceptable actions are routed back to the responsible party for resolution.
- 3.78 The Quality Representative follows up on all closed CARs to ensure their effectiveness.
- 3.79 The Quality Representative evaluates if additional nonconforming product exists based on the causes of the nonconformities and taking further action when required.

- 3.80 The Quality Representative or designee maintains records of CARs by filing them once they are closed.

Preventive Action (8.5.3)

- 3.81 Preventive actions can be drawn from gathering and analyzing operating data. Sources of such operating data may include KPI tracking, any other statistical analysis, audit results, and customer comments. Many “management decisions” are a form of Preventive Action and can be captured as such. This is done to detect, analyze and eliminate causes of potential nonconformities.
- 3.82 Additional examples of preventive action opportunities include risk management, error proofing, failure mode and effect analysis (FMEA), and information on product problems reported by external sources.
- 3.83 Preventive actions are documented on the Preventive Action Report and logged on the CAR Log for tracking.
- 3.84 Potential nonconformances and their causes are determined and recorded on the PAR.
- 3.85 Evaluation of the need for action to prevent potential nonconformities is made.
- 3.86 Implementation of the action needed is determined and recorded on the PAR.
- 3.87 Results of the preventive action taken are recorded on the PAR.
- 3.88 The Quality Representative or designee follows up on all closed PARs to ensure their effectiveness. All PAR follow up activity is recorded on the PAR.

4.0 RELATED DOCUMENTATION

AS9100C:2009 and ISO 9001:2008 International Standards
AS9102A Aerospace First Article Inspection Requirement
ISO 19011:2004 Guidelines for . . . Auditing
QP05 – Management Responsibility
QP07 – Product Realization
Corrective Action Report (CAR)
CAR Log
Customer Satisfaction Survey
Discrepant Material Report (DMR)
DMR Log



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MEASUREMENT, ANALYSIS,
AND IMPROVEMENT

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First Article Inspection Form
Inspection Record
Internal Audit Schedule
Internal Audit Working Document
Internal Corrective Action Report (ICAR)
Job Traveler
Key Performance Indicators (KPI)
Management Review Minutes
Preventive Action Report (PAR)
Supplier Corrective Action Report (SCAR)