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PMA and 14 CFR 21 QUALITY MANUAL

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Abstract:
This document describes the quality management system for ***14 CFR 21***.

REVISION LOG

Issue	Date	Comment	Author
Orig			

DOCUMENT CHANGE RECORD

Issue	Item	Reason for Change

Changes to the Quality System are approved by the FAA ***Certificate Management Section (CMS)*** prior to implementation.

The Company immediately notifies the FAA ***CMS***, in writing, of changes that affect inspection, conformity or airworthiness of approved articles.

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1.0 SCOPE

This quality assurance manual is submitted to the Federal Aviation Administration (FAA) for information and conformance according to Regulatory Compliance requirements. This manual includes verification policies and procedures and instructions for the design, development and manufacture of Parts Manufacturer Approval (PMA) articles for various model aircraft under the authority of Title 14 Code of Federal Regulations (14 CFR).

This manual establishes and maintains a quality assurance system to ensure compliance and conformance with FAA-PMA Articles manufactured for use on certified aircraft or as detail components of an aircraft assembly.

Changes that impact inspection, conformity and airworthiness are only implemented into this manual with prior FAA approval.

The Company notifies the FAA in writing, in advance, when the manufacturing facility is relocated or expanded to other locations. Prior to shipping FAA-PMA parts from a new location, the new facility is evaluated and approved by the FAA.

The Company is committed to the ongoing maintenance and improvement of the quality management system; to ensure this, management focuses on deploying practical steps that positively support quality and environmental policies.

- **CUSTOMER FOCUS:** [redacted]
- **EMPOWERMENT:** [redacted]
- **INTELLIGENT MANAGEMENT**: [redacted]
- **WORKPLACE EXCELLENCE**: [redacted]

1.1 Overview of Responsibility and Authority

The organizational chart in Appendix 1 is an overview of the management structure of the Company. See personnel roster for the name of the Responsible Authority (RA) in each branch of management that includes multiple assignments. In all cases, the appropriate person has [redacted]

[redacted]

1.2 Management Representative

The Accountable Manager of the Company has been assigned the role of Quality System Management Representative. The Accountable Manager is responsible for [redacted]

The Accountable Manager is responsible for [redacted]

In addition, the Accountable Manager [redacted]

1.3 Internal Communication

To ensure proper communication between and throughout all levels of employees within the Company, internal communication is [redacted] This system requires management to [redacted]

1.4 Management Review

Management Review meetings are conducted according to the ***QMS-04 Management Process Procedure***. This procedure defines [redacted]

Section A: Design Data Control

A1 Copies of all drawings for FAA Approved articles are [redacted]

A2 Design data is filed by Drawing Number and the latest revision is [redacted]

A3 Minor design changes to the PMA Articles are [redacted]

A4 Major design changes are [redacted]

[redacted] These design changes may require amendments or additions to:

- [redacted]
- [redacted]
- [redacted]
- [redacted]

A5 Material Review Board (MRB) is [redacted]

Section B: Document Control

Documents are controlled to ensure information is [redacted] The controls for documents are defined in the ***QMS-01 Control of Documented Information Procedure.***

Paper records are controlled to provide evidence of conformity to requirements. The Company has established a documented procedure for control of electronic records. Electronic records are [redacted]

B1 Configuration Management

The configuration of products is controlled through advanced configuration management techniques that have been built upon the requirements of [redacted] Configuration management is conducted according to the ***QMS-02 Configuration Management Procedure.***

Section C: Supplier Control

C1 Materials received are required to [redacted] Supplied items that support manufacturing and or assembly of FAA-PMA articles are inspected for [redacted]

a. Reports of unsatisfactory conditions are [redacted]

b. Review of documented unsatisfactory conditions increases [redacted] An on-site visit may be required that verifies:

- [redacted]
- [redacted]

C2 Material is labeled to [redacted]

C3 Materials are stored [redacted]

C4 Vendors supply [redacted]

Note: As part of the receiving inspection process, a comparison is made between the Supplier's packing sheet and the purchase order then each shipment is inspected for:

- [redacted]

After acceptance of incoming shipments, the Responsible Authority [redacted]

C5 When discrepancies are encountered during inspections, the material or shipment is [redacted] according to the ***QMS-14 Control of Nonconformities Procedure***.

C8 Rejected articles are [redacted]

C9 Requirements

Purchasing is treated as a process within the Company's quality system. [redacted] The Company does not [redacted] The process is fully defined in the ***QMS-08 Purchasing Procedure***.

C9.1 Purchasing Process

The purchasing process [redacted]

C9.2 Purchasing Information

Purchase orders are used to transmit the Company's requirements to Suppliers.

C9.3 Verification of Purchased Product

Incoming materials are [redacted] The process is defined in the ***QMS-09 Receiving Procedure***.

C10 Identification and Traceability

All products are identified throughout product life cycle. This is fully defined in ***QMS-10 Production Process***. Other identification and traceability requirements are [redacted]

C11 Preservation of Product

The Accountable Manager [redacted] The instructions are detailed in the applicable job documentation and general rules are defined in the ***QMS-11 Shipping Procedure***.

Section D: Manufacturing Control

The Design and Development process ensures that design activities are conducted in a controlled manner, which is defined in the ***QMS-17 Design and Development Procedure***. ***Instructions for Continued Airworthiness*** (ICA) are kept current with design changes.

D1 Materials received are required to [redacted]

D2 A ***Shop Routing Sheet*** is used to document the number of pieces at each step of the manufacturing process and is used to annotate any losses. A shop routing sheet is used for [redacted]

D3 The Company uses a folder for [redacted]

D4 Parts are inspected to [redacted]

D5 Small parts (sub-assemblies) are marked according to ***FAR 45.15(b)*** with a tag attached to the part or the packaging for the part.

D6 Parts are permanently marked or tagged with:

[redacted]

D7 Requirements:

The Company plans and carries out processes for product realization. In general, this includes assurances that:

- [redacted]

- [redacted]

In-process inspection is conducted according to [redacted]

These activities are fully defined in the ***QMS-10 Production Procedure.*** All products are identified throughout product life cycle. Other identification and traceability requirements are [redacted]

D7.1 Production Documentation

Production operations are performed according to [redacted] In addition, the Company may utilize [redacted] These activities are fully defined in the ***QMS-10 Production Procedure*** and the ***QMS-17 Design and Development Procedure***.

D7.2 Control of Production Process Changes

Only the Configuration Control Board may approve changes to production processes. The Company identifies and obtains Customer and/or regulatory authority approval for changes when [redacted] These activities are fully defined in the ***QMS-10 Production Procedure*** and the ***QMS-17 Design and Development Procedure***.

D7.3 Control of Production Equipment & Tools

Production equipment, tools and programs are [redacted]

D7.4 Control of Work Transferred on a Temporary Basis Outside the Organization's Facilities

When the Company provides supplies for outside processing, such as acceptance testing, it is done under the following controls:

- [redacted]

D7.5 Control of Service Operations

The Company services supplies returned to it for warranty work or repair - field servicing is**(is not)** performed. For such product work, [redacted]

D8 Customer Property

Where Customer property is provided to the Company for processing or use, it is [redacted] Damaged or missing Customer property is [redacted]

Government and Customer property is controlled according to the ***QMS-10 Production Procedure***, specified contractual requirements and [redacted]

D9 Preservation of Product

The Accountable Manager specifies, where required and according to contractual directives, instructions for [redacted] The instructions are detailed in the applicable job documentation and general rules are defined in the ***QMS-11 Shipping Procedure***.

D10 Identification and Traceability

All products are identified throughout product life cycle. This is fully defined in the ***QMS-10 Production Procedure***. Other identification and traceability requirements are [redacted]

D11 Monitoring and Measurement of Product

To ensure the conformance of product to requirements, monitoring and measurement is conducted [redacted]

The Quality Group is responsible for [redacted]

Inspection methods may include but are not limited to: [redacted]

[redacted] The inspection includes verification of compliance to: [redacted]

Inspection by statistical sampling is applied, as appropriate and when specified, in [redacted] Authorized sampling plans for product acceptance are based on ***SAE ARP9013, Statistical Product Acceptance Requirements*** and documented in work instructions. The specified sampling plan for a designated application is [redacted]

In the event supplies are needed prior to receipt of Certified Test Data, Certificate of Compliance or Analysis, approved ***Request for Deviation or Waiver*** or other limited risk condition, at least two applicable MRB members may [redacted]

D11.1 Inspection Documentation

The engineering drawing, FAA-approved design data and/or other technical documentation provide the requirements for all deliverable supplies. In all cases, this includes [redacted]

D11.2 First Article Inspection (FAI)

When required by purchase order or Customer specification, a First Article Inspection (FAI) is performed. The FAI is [redacted]

D12 Competence, Training and Awareness

All Company personnel are hired on the basis of their ability to [redacted]

The Company has implemented a training program that:

- [redacted]

Management conducts periodic reviews of employee performance. Appropriate records of education, training, skills and experience are [redacted] The training program is defined in the ***QMS-06 Training Procedure.***

Section E: Inspecting & Testing

E1 Request For Service Inspectors (RFS) determine that each completed part conforms to the design data and is [redacted] Inspectors perform the following:

- [redacted]

E2 RFS Inspectors have access to FAA approved data and specifications when inspecting FAA-PMA articles.
When witnessing acceptance tests, the Inspectors [redacted]

E3 All inspection records described above and the record of disposition are [redacted]

E4 Requirements

Inspection methods may include but are not limited to: [redacted]

E4.1 In-Process Inspection

In-process inspections are conducted during production to [redacted]

[redacted]

E4.2 Final Inspection

Once all operations are complete, the lot is submitted to Quality for a final inspection. This is performed according to an accepted sampling plan, The sampling plan is [redacted]

Section F: Inspection, Measuring and Test Equipment Control

F1 Tools, gauges and test equipment are [redacted]

F2 Tools, gauges and test equipment that become inaccurate are [redacted]

F3 Special tools, shop aids, master gauges or molds manufactured by RFS that are contracted with or purchased from a vendor are [redacted]

F4 Inaccuracy of tools, gauges, test equipment and molds identified during periodic inspections are [redacted]

a) The Company notifies CMS of any quality escape.
b) The Company processes actions according to Section N herein.

F5 Scales, shop aids and measuring devices used for inspection are [redacted]

- All inaccuracies are [redacted]
- Serviceable certifications are [redacted]
- Unserviceable tools are [redacted]

F6 Requirements

All measuring and test equipment instruments and devices used to determine an article's conformance to specified requirements are [redacted]

Section G: Inspection and Test Status

G1 The inspector affixes an initial on the ***Inspection Record*** indicating [redacted]

G2 Rejected components are [redacted]

Section H: Nonconforming Product and Article Control

H1 Nonconforming and rejected materials are [redacted]

H2 Nonconforming parts may [redacted]

H4 Major Change incorporation to FAA-PMA articles are first approved by FAA ACO and CMS with PMA addition.

H5 Requirements

All supplies found to be nonconforming against specified requirements are [redacted]

Procedures are available for receiving and processing feedback for in-service failures, malfunctions and defects. The procedures include [redacted]

Procedures are available that establish a system for receiving, processing and tracking in-service failures. The procedures include provisions to [redacted] Service problems, unairworthy conditions, unsafe features and unsafe characteristics are reported to the FAA according to ***FAR §21.3 (§21.9)*** and are [redacted] See the ***QMS-14 Control of Nonconformities Procedure.***

Section I: Corrective and Preventive Action

I1 Corrective actions review non-conformities of manufactured articles to:

- [redacted]
- [redacted] cur
- [redacted]
- [redacted]
- [redacted]

I2 Action is taken to:

- [redacted]

I3 Preventive Action is taken to:

- [redacted]

I4 Requirements

I4.1 Corrective Action

The Company has implemented and maintains a robust system for identifying and reporting nonconformities requiring corrective action. These nonconformities can [redacted] This process is defined in ***QMS-13 Corrective Action Procedure***.

I4.2 Preventive Action

In addition to the preventive measures taken for corrective action requests (used to prevent recurrence of an existing problem) the Corrective and Preventive Action process is used to [redacted] This process is defined in the ***QMS-13 Corrective Action Procedure***.

Section J: Handling & Storage

J1 All materials are [redacted]

J2 Acceptable finished products are [redacted]

J3 Parts are [redacted]

J4 Parts are [redacted]

J5 Parts are [redacted]

J6 Requirements: Preservation of Product

The Responsible Authority specifies, where required and according to contractual directives, instructions for [redacted]

[redacted] general rules are defined in the ***QMS-11 Shipping Procedure***.

Section K: Control of Quality Records

K1 The Company controls and distributes [redacted] approved changes are made available to:

- [redacted]

And manage records as:

- [redacted]

K2 The Company retains files for [redacted]

Note: The Company ensures that only FAA approved data is used for manufacturing, instruction and support.

K3 Requirements: Control of Records

Paper records are [redacted] defined in procedure ***QMS-01 Control of Documented Information Procedure***.

Section L: Internal Audits

L1 Request For Service Inspectors conduct Internal Audits according to [redacted]

See Internal Audit control log:

[redacted]

L2 Requirements: Internal Audit

Internal quality audits are conducted to ensure ongoing compliance with requirements of the Company's policies and procedures. This is accomplished by [redacted] The internal audit process is fully defined in the ***QMS-12 Internal Auditing Procedure***.

Section M: In-Service Feedback

Service Difficulty Reports (SDRs)

M1 When in service difficulties are discovered, they are reported to the FAA ACO and CMS.

Note: The Company reports ***14 CFR 21.3*** conditions to the FAA ACO and CMS within 24 hours, with the exceptions of weekends and recognized holidays.

Self Disclosure Reporting

M2 When in-service difficulties are found for an article, they are reported to the FAA's geographic CMS.

Airworthiness Directives (ADs)

M3 In the event that an Airworthiness Directive is issued by the FAA, the Company immediately implements applicable changes, if any, to articles affected by the AD.

- When appropriate, changes related to an AD are [redacted]

Section N: Quality Escapes

A quality escape is defined as any article that has been released from the quality system that does not conform to the applicable design data or quality system requirements.

N1 The Company notifies the FAA of any apparent quality escape by contacting the FAA CMS office. Initial notice of a voluntary disclosure may be submitted orally, by electronic means or by written hardcopy.

N2 Notification is made in a timely manner, normally within 24 hours of the discovery of the apparent quality escape, with the exception of weekends and recognized holidays.

N3 Quality escape notifications include the following information:

- [redacted]

Section O: Issuing Authorized Release Documents

The Company may issue authorized release documents for [redacted]

O1 The Company ensures that only qualified personnel issue authorized release documents. Evaluation of persons responsible for authorizing release documents includes [redacted]

O2 FAA Form 8130-3.

The Company's authorized personnel issue release documents using ***FAA Form 8130-3***.

O3 Conditional Requirement.

When applicable, the Company may obtain airworthiness approvals from the FAA.

Section P: PMA Article Part Marking

P1 PMA articles: Responsible Authorities permanently and legibly mark all FAA PMA articles with the following:

- [redacted]

P2 Sample of marking used on all PMA articles:

Your Sample Markings

P3 [redacted]

Section Q: Shipping / Export of Completed Articles

Q1 All required documents are [redacted]

Q2 Before exporting products to other Countries, ***FAA AC21-2*** and ***Bilateral Agreements*** are reviewed for applicable requirements.

Q3 All shipping documents are followed and completed according to [redacted]

Section R: Supplemental Requirements

Supplemental FAA policies are defined in ***QMS-18 Supplemental Policies***.

Appendix 1: Organization

INSERT ORG CHART

Appendix 2: Facility Layout

INSERT FACILITY MAP