

CASE STUDY

Martindale Quality System



AS9100, Fulcrum, and Smartsheet for Accountability, Traceability, and Production Control



Aerospace quality, audit readiness, traceability, and integrated production flow

Overview

Martindale operates in highly regulated aerospace environments where quality, traceability, and accountability are non-negotiable. The company has been AS9100 certified since 2009, meeting the quality system requirements expected by aerospace primes and tier-one suppliers.

To support the growing rigor of AS9100 audits and reduce risk inherent in paper-based processes, Martindale transitioned from manual travelers to a fully digital quality and production system built around **Fulcrum** and **Smartsheet**. Together, these tools form a tightly integrated system that ensures every manufacturing step is completed, verified, and traceable in real time.

Challenge

AS9100 is a comprehensive quality management system that requires clear accountability for every step in the manufacturing process. Historically, Martindale relied on paper travelers to guide production and record inspections.

While effective in theory, paper-based systems introduced risk:

- Travelers could be lost or left incomplete
- Signatures and timestamps could be missed
- Revision control was difficult to guarantee
- Audit preparation often uncovered unsigned or outdated documentation

AS9100 requires accountability and documented confirmation at every step of production.

These gaps created audit findings that required corrective actions, even when the work itself had been performed correctly. As audit expectations increased across the aerospace industry, Martindale needed a system that enforced compliance by design.

Solution

Fulcrum: A digital traveler that enforces compliance

Fulcrum is Martindale's cloud-based traveler system. It replaces paper with a digital system

that requires quality verification before the parts can advance to the next step in the sequence. Each job in Fulcrum:

- Defines the full sequence of manufacturing and inspection steps
- Requires operators to enter measurement data at the point of work
- Flags out-of-tolerance conditions immediately
- Records who completes each step and when

Fulcrum also manages procurement and outside processing. Raw materials, external finishes, and certificates of conformance are all digitally tied to the job, creating a complete and auditable record from start to finish.

Smartsheet: Production scheduling at the system level

While Fulcrum manages the detailed execution of each job, Smartsheet provides a high-level

view of production flow. Martindale uses Smartsheet to:

- Identify major steps in each job and sequence the work
- Estimate lead times based on queued work
- Adjust priorities in response to customer needs
- Rebalance workloads across the shop floor in real time

Quality built into the flow

Martindale's lean manufacturing approach means quality checks are performed in-station by the operator. Fulcrum reinforces this by requiring operators to complete and record inspections as part of the normal workflow.

The system also integrates advanced inspection tools, including Keyence Vision Systems, prompting operators to perform automated optical checks at defined intervals. Fulcrum tracks and enforces these checks, ensuring they are completed and recorded.

Results

For Martindale's aerospace customers, the system delivers confidence. Parts arrive with complete documentation, verified quality checks, and full traceability.

Martindale's quality system reflects a philosophy of accountability, transparency, and continuous improvement. By embedding quality directly into production workflows, the company ensures that issues are identified immediately, corrected permanently, and prevented from recurring.

This approach supports long-term customer trust and positions Martindale as a reliable partner for aerospace and other regulated industries where quality cannot be assumed and must be proven every time.

The quality system is largely invisible to customers, but its results are not.



100% compliance with required traveler steps



Elimination of audit findings related to incomplete documentation



Improved traceability to individual operators and timestamps



Reduced errors, rework, and missteps



Faster root cause analysis and permanent corrective actions



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