CASE STUDY

Aircraft Engine MRO Provider Reduces Turnaround Time and Strengthens Compliance with Digital Execution Platform

Key Takeaways

- Faster, Predictable Turnaround
- Full Component Traceability
- Standardized Workflows
- Lower Compliance Risk
- Higher Technician Productivity

OVERVIEW

A leading aircraft engine maintenance, repair, and overhaul (MRO) provider supporting business aviation, commercial aviation, and defense platforms sought to modernize its maintenance execution environment.

The organization operates multiple engine service centers providing inspection, repair, overhaul, and component replacement services for turbine engines used across corporate aviation fleets and special mission aircraft.

As maintenance volumes increased and compliance requirements expanded, leadership recognized the need to improve operational coordination, workflow visibility, and audit readiness across engine maintenance programs.

CHALLENGE:

The engine service organization relied on a combination of legacy MRO systems, manual documentation processes, and disconnected workflow tools to manage engine maintenance execution.

While these systems captured maintenance transactions, they lacked the ability to orchestrate end-to-end execution across technicians, engineering approvals, parts tracking, and quality documentation.

Key operational challenges included:

- Fragmented maintenance workflows across planning, inspection, and repair processes
- Manual routing of engineering approvals for repairs and deviations
- Paper-based documentation and technician sign-offs creating audit preparation delays
- Limited visibility into engine work order status across maintenance programs
- Difficulty maintaining traceability of serialized components and repair history

These limitations created operational bottlenecks that slowed maintenance throughput and required significant effort during regulatory and customer audits. Leadership sought a solution capable of establishing a connected digital execution environment for engine MRO operations.

SOLUTION:

The organization implemented the Impresa enterprise MRO execution platform to digitize and orchestrate engine maintenance workflows across its service centers.

Rather than replacing existing ERP and business systems, Impresa was deployed as a maintenance execution layer, connecting operational processes across maintenance planning, engineering review, quality assurance, and parts management.

Key capabilities implemented included:

- Digital work order execution workflows for engine maintenance programs
- Automated technician sign-off and documentation capture
- Integrated serialized parts and component tracking
- Engineering deviation management workflows
- Real-time operational dashboards for maintenance leadership

By establishing standardized digital workflows, the organization created a structured digital thread connecting maintenance planning, execution, and compliance documentation.

RESULT:

Following implementation, the engine service organization achieved measurable improvements in maintenance efficiency, compliance readiness, and operational visibility.

Turnaround Time Improvements

Maintenance programs experienced a reduction in average engine turnaround time of approximately 20–25%, improving customer delivery performance and service capacity.

Technician Productivity Gains

Digitized work instructions and automated sign-offs reduced administrative workload, enabling technicians to focus more time on maintenance execution. The organization recovered approximately 1–2 technician hours per shift previously spent on manual documentation and coordination tasks.

Improved Compliance & Audit Readiness

Automated documentation capture and workflow traceability significantly reduced the effort required to prepare for regulatory and customer audits. Audit preparation time was reduced by more than 50%, with maintenance records immediately accessible through the digital workflow system.

Real-Time Operational Visibility

Maintenance leadership gained real-time insight into engine work order progress, enabling proactive management of workflow bottlenecks and resource allocation. This improved coordination across maintenance planning, engineering, quality, and operations teams.

Operational Impact

By implementing a connected digital execution platform, Impresa MRO, the engine MRO provider transformed maintenance operations from fragmented workflow management to structured digital orchestration.

Key operational outcomes included:

- Faster and more predictable maintenance turnaround times
- Improved traceability of serialized engine components
- Standardized maintenance workflows across service centers
- Reduced compliance risk and audit preparation effort
- Increased technician productivity and collaboration

The organization now operates with greater operational control and confidence as maintenance complexity and regulatory requirements continue to increase.

Modernizing Aircraft Engine MRO Execution

Aircraft engine maintenance environments require precise coordination across technicians, engineering teams, parts management, and compliance documentation. Organizations relying on fragmented workflows and manual documentation face increasing operational and regulatory risk.

Modern MRO execution platforms provide the digital infrastructure necessary to:

- Connect maintenance workflows across people, parts, tools, files, and data
- Establish a digital thread across engine maintenance programs
- Strengthen compliance and traceability
- Improve operational efficiency and turnaround performance

Impresa helps aviation and defense maintenance organizations modernize maintenance execution and achieve predictable operational outcomes.

TESTIMONIAL:

"*Impresa provided the structure, traceability, and visibility our engine maintenance programs require. We've reduced turnaround time, strengthened compliance oversight, and gained real-time operational control across our MRO workflows*", said the Director of Engine Operations.

CONCLUSION:

By modernizing its engine maintenance environment with Impresa MRO, the organization transformed maintenance execution from fragmented, manual coordination into a structured and digitally orchestrated process. Standardized workflows, automated documentation capture, and real-time operational visibility enabled maintenance leaders to reduce turnaround time, strengthen compliance oversight, and improve coordination across engineering, quality, and operations teams.

With a connected digital execution platform in place, the organization now operates with greater predictability, traceability, and operational control across its engine MRO programs. As maintenance volumes and regulatory expectations continue to grow, the company is better positioned to deliver reliable service performance while maintaining the highest standards of safety, compliance, and operational efficiency.

ABOUT THE COMPANY

The company featured in this case study is a leading independent provider of aircraft engine MRO services supporting business aviation, commercial aviation, and special mission aircraft operators worldwide. Operating multiple engine service centers, the organization provides inspection, repair, overhaul, and component services for turbine engine platforms used across corporate and mission-critical fleets. Known for its technical expertise and commitment to operational excellence, the company supports customers across North America and international markets.

ABOUT IMPRESA

Impresa Corp delivers next-generation aviation MRO software that unifies people, parts, tools, files, and data into a single, orchestrated platform. Designed by aerospace professionals, Impresa MRO helps airlines, OEMs, and third-party providers reduce turnaround time (TAT), improve compliance, and lower total cost of ownership. With flexible self-hosted deployment and real-time visibility, Impresa enables organizations to meet today's challenges and the future demands of aviation maintenance. Learn more at impresa-us.com.