

Reducing AOG Time:

The Visual Operations Imperative
in Aviation Maintenance





Why MROs Are Abandoning Text-Based Workflows for Video Documentation

Aircraft on ground (AOG) time represents one of the most expensive operational failures in aviation. Every minute an aircraft sits idle, it generates costs rather than revenue. It has a negative impact on everything from crew expenses and passenger accommodations to lost utilization and schedule disruptions. Yet despite sophisticated diagnostic systems and highly trained maintenance teams, one persistent bottleneck continues to extend AOG time unnecessarily: inadequate communication and documentation workflows.

The \$10,000-Per-Hour Urgency

When an aircraft goes AOG, the financial pressure is immediate and severe. Depending on aircraft type and operation, hourly costs can easily exceed \$10,000 when accounting for direct expenses, missed revenue opportunities, and downstream schedule impacts. In this environment, every improvement that shaves hours off maintenance cycles delivers measurable ROI.

The challenge isn't typically technical competence. MROs employ highly skilled maintainers who understand their craft. The challenge is information flow. When a pilot reports an anomaly, when a line maintainer identifies an issue, when a heavy maintenance team needs leadership approval, or when warranty determination requires evidence review, the speed and clarity of communication directly impacts how quickly aircraft return to service.

Every minute an aircraft sits idle, it generates costs rather than revenue—making inadequate communication and documentation one of the most expensive bottlenecks in MRO operations.



Why Aviation's Current Communication Model Creates Bottlenecks

Aviation maintenance operates under unique constraints that make traditional communication methods particularly problematic:

1. Remote operations mean issues often arise far from maintenance bases. An aircraft at an outstation may develop a problem that requires expert diagnosis from specialists hundreds or thousands of miles away. Describing complex mechanical, electrical, or structural issues over phone or text invites misunderstanding and delays.
2. Technical precision requirements leave no room for ambiguity. Aviation maintenance demands an exact understanding of component condition, failure modes, and repair requirements. When a maintainer says "unusual vibration" or "possible corrosion," leadership needs to see exactly what the issues are in order to make accurate decisions about airworthiness, required actions, and resource allocation.
3. Multi-layered approval chains slow response times. Maintenance decisions often require sign-off from multiple parties, including maintenance controllers, engineering teams, operations managers, and sometimes regulatory authorities. Each handoff introduces delay, especially when stakeholders must request clarification because initial reports lack sufficient detail.
4. Distributed workforce challenges compound these issues. Modern MROs often coordinate across multiple locations with maintainers, supervisors, and leadership spread across facilities, countries or even continents. Real-time collaboration becomes difficult when geographic separation prevents direct inspection of issues.
5. Fly-along inspection costs represent a hidden expense. When technical issues can't be diagnosed remotely, airlines must fly specialists to aircraft locations or ferry aircraft to maintenance bases for assessment. These inspections add hours or days to AOG events while racking up travel expenses and consuming valuable technical expertise.



The Enterprise Video Operations Solution

Leading MROs are fundamentally rethinking how they capture, share, and manage operational media. Rather than relying on text descriptions supplemented by occasional photos, they're implementing enterprise video operations platforms that make high-quality visual documentation the primary communication method.

The transformation addresses multiple pain points simultaneously:

1. Immediate diagnostic capability emerges when maintainers can record and transmit detailed video showing exactly what's happening. Vibration that's impossible to describe in text becomes immediately apparent in video. Intermittent electrical issues can be documented when they occur. Structural concerns can be shown from multiple angles with context that static photos cannot provide.
2. Standardized capture workflows ensure consistency across a distributed workforce. Instead of each maintainer using personal judgment about what to document and how, guided video capture walks them through structured steps that ensure leadership receives the information needed for rapid decision-making.
3. Expert remote diagnosis becomes practical when video quality and comprehensiveness eliminate the need for physical presence. A turbine specialist can assess a compressor issue from headquarters rather than flying to the aircraft. A structures engineer can evaluate damage without leaving their office. This capability doesn't just save travel costs, it makes expert knowledge instantly available regardless of location.
4. Accelerated parts planning can happen when issues are identified and confirmed earlier in the process. Instead of waiting for physical inspection before ordering parts, MROs can review video evidence and begin procurement immediately, reducing the time aircraft spend waiting for parts to arrive.



Enterprise-Grade Requirements for Aviation

Aviation operations cannot rely on consumer-grade solutions. The media documentation platform supporting maintenance workflows must meet enterprise requirements that ensure security, compliance, and operational reliability:

1. Access controls and permissions must align with organizational hierarchy and regulatory requirements. Not all media should be accessible to all personnel. Role-based access ensures only authorized individuals can view, share, or download sensitive maintenance documentation.
2. Chain of custody and metadata create defensible audit trails. Every video must include timestamps, user identification, device identification, and other metadata that establishes exactly when and by whom media was captured. This documentation supports both internal quality assurance and external regulatory review.
3. Secure infrastructure at scale addresses the reality that aviation video files are large and numerous. High-resolution documentation of complex components generates substantial data volumes. The platform must provide enterprise-grade compression, storage, secure transfer capabilities, and reliable access without performance degradation.
4. Integration with existing systems ensures video documentation doesn't create parallel workflows. Media must attach directly to work orders, maintenance logs, and aircraft records so it becomes part of the permanent documentation rather than being scattered across personal devices or email systems.



Transforming Maintenance Throughput

The ultimate measure of success isn't just faster diagnosis, it's increased throughput. MROs face constant pressure to move aircraft through maintenance more quickly without compromising quality or safety. Hangar space is expensive and limited. Every aircraft occupying a bay represents both revenue and opportunity cost.

Visual operations platforms improve throughput through several mechanisms:

1. Earlier problem identification means maintenance planning can begin sooner. When pilots or line maintainers record video of issues immediately upon discovery, maintenance control receives actionable information before aircraft even arrive at maintenance facilities.
2. Reduced mid-maintenance delays occur when everyone works from complete, clear documentation. Maintainers don't pause work to seek clarification. Supervisors don't interrupt tasks to request additional information. Parts teams don't order wrong components due to misunderstanding. The team actually works as a team.
3. Proactive labor allocation becomes possible when planners can see the work scope clearly before aircraft arrive. Complex jobs requiring multiple specialists can be staffed appropriately from the start rather than discovering halfway through that additional expertise is needed.
4. Elimination of rework follows from better initial understanding. When everyone sees the same evidence and agrees on the problem before work begins, teams are far less likely to pursue incorrect repair strategies that must be reversed midstream.



Security and Compliance in a Personal Device World

Many MROs unknowingly operate with significant compliance gaps in their media documentation practices. Maintainers routinely use personal phones to capture photos and videos, then share files through text messages, personal email accounts, or consumer messaging apps. This informal workflow creates multiple risks:

1. Media captured on personal devices often lacks proper metadata and chain of custody documentation. When regulatory authorities or internal auditors request maintenance records, informal photos and videos may not meet evidentiary standards.
2. Uncontrolled sharing through consumer channels creates security vulnerabilities. Sensitive operational information, aircraft configurations, component serial numbers, and maintenance procedures may be transmitted through unencrypted channels or stored on unsecured consumer cloud services.
3. Access control is impossible when files are scattered across personal devices and accounts. Organizations cannot ensure that only authorized personnel view sensitive maintenance media, revoke access when employees leave, or audit who accessed what information and when.

Enterprise video operations platforms eliminate these gaps by providing centralized, secure infrastructure that is purpose-built for operational media management. Organizations regain control over critical documentation while actually making maintainer workflows easier rather than more cumbersome.

When maintenance media lives on personal devices and consumer apps, organizations lose chain of custody, access control, and the ability to meet regulatory evidentiary standards.



Implementation Roadmap for MROs

Successful implementation of visual operations requires thoughtful planning and change management:

- Start with high-impact use cases where visual documentation delivers immediate value. Pilot-reported issues, AOG diagnostics, and heavy maintenance decision points typically show the fastest ROI and build momentum for broader adoption.
- Standardize capture methods through training and guided workflows. Ensure all maintainers understand what to document, how to capture it, and when to use video versus photos. Consistency is key to leadership trust and operational efficiency.
- Integrate with existing systems rather than creating separate processes. Video and photo documentation should attach directly to work orders and maintenance records, becoming part of normal workflows rather than additional tasks.
- Measure the impact on metrics leadership cares about:
 - Average AOG duration
 - Maintenance throughput time
 - Fly-along inspection frequency
 - Rework rates

Quantifiable results build organizational support and justify continued investment.

- Address the cultural shift from text-centric to visual-first communication. Some team members may resist change. Success requires demonstrating that video documentation makes their jobs easier while improving organizational outcomes.



The Competitive Landscape

Aviation MRO is an increasingly competitive market. Operators have options, and they gravitate toward maintenance providers who can minimize downtime while maintaining the highest safety and quality standards. MROs that leverage visual operations platforms gain competitive advantages that translate directly to customer satisfaction and retention. Faster turnaround times mean operators can schedule maintenance more confidently. Better documentation means fewer warranty disputes and clearer communication with aircraft lessors. Enhanced quality assurance means fewer comebacks and stronger safety records. All of these factors influence operator decisions about where to place maintenance business.





Looking Forward

Visual operations represent more than a tactical improvement. They signal a fundamental shift in how aviation maintenance will operate in coming years. As aircraft become more complex, MRO consolidation continues, and cost pressures intensify, organizations that can execute maintenance more efficiently while maintaining or improving quality will define industry leadership.

The question for aviation maintenance leadership isn't whether to adopt enterprise video operations. The question is whether to lead this transition now or respond reactively as it becomes standard practice across the industry.

About This Report

This report examines how enterprise video operations platforms are transforming aviation maintenance operations and reducing AOG time. For more information on implementing these capabilities in your organization, visit truvideo.com/aviation

About TruVideo

TruVideo is the video intelligence platform transforming how businesses diagnose problems, communicate critical information, and make faster, more accurate decisions. Proven in automotive with thousands of dealerships increasing service revenue 10-35%, TruVideo now serves aviation maintenance, insurance underwriting and claims, and commercial trucking. The AI-powered platform provides guided video capture, enterprise-grade security, and verified documentation that replaces costly inspections, accelerates diagnostics, prevents fraud, and eliminates disputes, helping organizations reduce down-time, protect margins, and improve operational efficiency. With over 80 million videos analyzed across 20+ OEMs and 800+ dealerships, TruVideo delivers measurable ROI wherever visual proof drives better decisions. www.truvideo.com