

OLIVER WYMAN

CAVOK

# CAVOK Overview of Services

CAVOK, a division of Oliver Wyman, is an aviation services and consulting firm that works with clients worldwide in two areas: certification support and maintenance programs. Our deep expertise, along with proprietary methodologies and tools, help air carriers to incorporate the latest safety standards, gain process efficiencies, streamline maintenance processes, and thus reap significant economic benefits. Clients include: scheduled and unscheduled air carriers; maintenance, repair and overhaul (MRO) facilities; regulatory bodies; and financiers. Founded in 1996, CAVOK was acquired by Oliver Wyman in 2007 and now draws on the strategic and operational expertise of Oliver Wyman's Aviation, Aerospace & Defense practice.



MARSH MERCER KROLL  
GUY CARPENTER OLIVER WYMAN

# Services

## Certification Support Services

CAVOK was one of the first companies to satisfy strict qualification requirements set by the Federal Aviation Administration (FAA) to assist new air carriers with their certification needs—an indication of our deep safety and operational expertise. We work with existing and start-up airlines on comprehensive safety certifications, new fleet type certification, or implementing a safety management system (SMS). Our proprietary software, the Interactive Safety Attribute Tracking application, helps ensure that carriers comply with regulatory and safety requirements and improve their operational efficiencies which potentially shortens the certification process.



### Four-step methodology

CAVOK’s four-step methodology assesses a carrier’s current program, if applicable, and then develops a manual system that conforms to an SMS.

**1. Safety program analysis.** We analyze the existing safety program, safety manual structure, and status of process documentation. We pinpoint those portions of the program that will require changes and highlight the areas that do not meet SMS standards.

**2. Process engineering.** To develop usable, process-driven manuals, we work side-by-side with the client team to map critical processes and identify process breakdowns, bottlenecks, and key issues. We then provide a root cause analysis of problem areas and a solution tailored to the client’s specific situation.

**3. Manual systems design.** We incorporate the most efficient processes into a comprehensive manual system, from maintenance to flight operations to general administrative tasks. We emphasize best practices, providing procedure-driven, easy-to-use documentation of processes.

**4. System safety/SMS conformance tools.** We address six key attributes of SMS to provide robust tools and training to meet federal regulatory requirements.

### Benefits

- Address and incorporate next-generation safety standards; gain process efficiencies
- Streamline processes through our custom solutions, which yields major economic benefits
- Integrate user-friendly manuals across a carrier through our proprietary software
- Ensure all areas of an SMS are implemented

## Maintenance Technical Services

The CAVOK Maintenance Technical Services team works with operators to review, improve, and customize aircraft maintenance inspection programs. We identify and correct regulatory gaps, evaluate maintenance program effectiveness, and tailor a carrier's program to its unique operating environment.

In addition to the program evaluation, CAVOK can recommend and execute changes for compliance issues, including preparation of escalation proposals, custom task card development, program packaging, and program bridging for new or changing fleets. A customized program can lead to cost savings, increased reliability and safety, and a more efficient operation for the carrier.

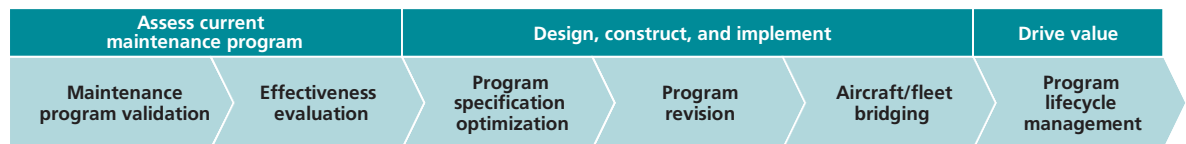
### Benefits

- Create up-to-date maintenance program with all regulatory requirements and assured on-going compliance
- Eliminate unnecessary operational tasks
- Incorporate best Lean engineering practices
- Develop work cards that increase maintenance personnel efficiency, ultimately reducing aircraft visit span time
- Realize maintenance cost savings through reduced cycle time and decreased labor and materials

Carriers and MRO providers have experienced significant benefits from a maintenance program review, no matter what their size. When combined with our operational improvement programs, such as Lean Six Sigma, required maintenance time can be reduced by as much as 50% while ensuring that the program maintains the required quality, reliability, and regulatory compliance.

### Six-step methodology

CAVOK's six-step methodology covers all critical maintenance issues



**1. Maintenance program validation.** We compare a carrier's current maintenance program to the latest revisions of all required elements. Using proprietary tools such as Inspection Program Gap (IPG) to help validate the inspection program, we then reconcile the gaps and eliminate inefficient elements.

**2. Effectiveness evaluation.** Using our proprietary Inspection Program Analysis (IPA) tool, we analyze maintenance program effectiveness by assessing pilot write-ups and reports and non-routine findings. This process provides substantiating data for opportunities to escalate, de-escalate, or delete task intervals while maintaining reliability.

**3. Program specification optimization.** Optimization mobilizes the results of IPG and IPA, providing the customer with the necessary tools to repackage and execute the program for improved efficiency. We develop effective time limits documents, determine the appropriate interval for each maintenance task, remove duplicate and ineffective tasks, and integrate repetitive “add-on” regulatory requirements where appropriate.

**4. Program revision.** Implementing a new program or changing an existing program without a loss of reliability is a daunting venture. Using our proprietary CAVOK Optimized Maintenance Management and Networked Database (COMMAND™), we repackage maintenance specifications into a visit profile that minimizes time out-of-service. The process includes developing detailed task card instructions that increase maintenance personnel efficiency, which in turn translates to a decrease in visit span time, representing substantial savings across the life of a maintenance program.

**5. Aircraft/fleet bridging.** We help carriers efficiently transition from their current maintenance program to a designated program or to bring new aircraft into an existing program.

**6. Program lifecycle management.** Using our COMMAND™ software, we support and maintain maintenance programs, monitor revision status in real time, and update task card instructions. Program support includes managing configuration and tracking availability of parts and tooling.

# Experience

CAVOK teams have worked with clients worldwide, as illustrated by the following examples:

**New carrier certification.** A start-up North American passenger carrier needed to gain FAA certification in order to begin operations in the U.S. The carrier engaged CAVOK to assist in the certification process. Our team clearly documented a set of procedures, developed a complete manual system, and provided the carrier with a submission package that conformed to FAA Certification, Standardization, and Evaluation Team (CSET) guidance. The manual system was accepted by the FAA on its first submission, allowing the carrier to expedite its product launch.

**Carrier transition to SMS.** A North American passenger carrier that was adding a new heavy aircraft type to its Operating Certificate selected CAVOK to manage their FAA New Aircraft Process Document (NAPD) event. CAVOK worked with the carrier to move toward SMS standard conformance as part of the NAPD submission to the FAA. This approach ensured the carrier's continued regulatory compliance with System Safety while providing a framework for improved safety and risk management within the organization.

**MRO system safety and operational assessment.** CAVOK worked with a major Middle Eastern MRO facility to develop a plan to improve its operational procedures with a key client. The engagement documented the operational procedures between the parties following SMS standards, which focused on managing operational risk. This engagement benefited both parties by delineating the responsibilities, risk management, process measurement, interfaces, and procedural controls between the MRO and its client.

**Weight and balance system assessment.** As part of a larger Oliver Wyman consulting engagement, CAVOK helped a large North American cargo and passenger carrier redesign its weight and balance system to improve process efficiency and ensure regulatory compliance. CAVOK worked with the carrier by observing the total lifecycle of the program at the execution level, then developing and documenting revised procedures, which increased accuracy and reduced special oversight of the program.

**Demonstration of regulatory compliance.** The FAA notified a regional North American air carrier that it had concerns about its fleet maintenance program. The situation escalated to the point that the carrier faced a potential grounding. CAVOK worked with the carrier to validate its maintenance program, creating detailed documentation that showed compliance and addressed FAA concerns. As a result, the carrier was allowed to continue operating.

**New fleet maintenance program.** A North American air carrier purchased additional B767 aircraft and needed to bridge the fleet into its existing maintenance program. CAVOK designed a bridging program and then implemented an optimized maintenance program for the fleet. This resulted in a 15% decrease in touch time during fleet checks and exceptional dispatch reliability.

**New fleet acquisition.** For a large Eastern European passenger carrier, CAVOK helped to induct ten A319 aircraft into the fleet, including a full records authentication effort and development of a maintenance program that met FAA and European Aviation Safety Agency requirements. Subsequent to project completion, the first two aircraft were successfully inducted within 30 days through a third-party MRO provider.

**Maintenance program optimization.** As part of a larger Oliver Wyman Lean Six Sigma engagement, CAVOK was engaged to employ the entire spectrum of maintenance technical services to optimize the maintenance program for a major North American cargo carrier. Program optimization is projected to result in a 16% reduction in touch time for maintenance checks as well as a reduction in aircraft out-of-service events.

# CAVOK Leadership

## **Jim Sturgis, Co-President**

Jim Sturgis is the co-president of CAVOK. Under his leadership, the company was the first organization to qualify as an FAA Qualified Certification Consultant and was ISO 9001:2000 certified. Mr. Sturgis has directed many air carrier and maintenance organization engagements, resulting in improved regulatory compliance, operational efficiencies, and cost reductions for clients.

## **Chris Spafford, Co-President**

Chris Spafford is the co-president of CAVOK and a partner in the Aviation, Aerospace & Defense practice at Oliver Wyman. Mr. Spafford focuses on the aviation MRO industry, providing expertise in strategic option development, strategic sourcing, supply chain, organization design, bankruptcy advisory, and operational and financial performance transformation.

## **C. Peter Feldmann, Chief Operating Officer**

C. Peter Feldmann is the chief operating officer of CAVOK and the point of contact for CAVOK's FAA Qualified Certification Consultant program. Mr. Feldmann's operational experience has focused on airline flight and maintenance departments, aviation communications, supply chain finance and automation, as well as, operational management of aviation related businesses.

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### Oliver Wyman

With more than 2,900 professionals in over 40 cities around the globe, Oliver Wyman is the leading management consulting firm that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, organizational transformation, and leadership development. The firm helps clients optimize their businesses, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities. Oliver Wyman is part of Marsh & McLennan Companies [NYSE: MMC]. For more information, visit [www.oliverwyman.com](http://www.oliverwyman.com).

For more information about our services, please contact CAVOK leadership directly:

**Jim Sturgis**  
+1.817.380.2810  
[jsturgis@cavokgroup.com](mailto:jsturgis@cavokgroup.com)

**Chris Spafford**  
+1.214.758.1879  
[christopher.spafford@oliverwyman.com](mailto:christopher.spafford@oliverwyman.com)

**C. Peter Feldmann**  
+1.817.380.2816  
[pfeldmann@cavokgroup.com](mailto:pfeldmann@cavokgroup.com)

[www.cavokgroup.com](http://www.cavokgroup.com)  
[www.oliverwyman.com](http://www.oliverwyman.com)

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