

Managed MRO IT as a service at Western Global Airline

Jim Buckalew, SVP Technical Operations and Technology, Western Global Airlines walks us through the new 'A-Team' Approach to Implementing Aerospace IT Solutions for a Changed Industry



In this article, we want to share with readers the recent implementation of Trax eMRO at Western Global Airlines. In that implementation, an internal team at Western Global was assisted by the MRO ATeam. This collaboration helped Western Global to achieve one of the fastest implementations of an MRO IT solution during one of the toughest times in our industry, and a global pandemic. I guess we should mention that we also experienced a number of hurricanes that hit the Gulf Coast of Florida during the same period. The MRO ATeam is part of the Aerospace ATeam which has verticals in airline operations, MRO IT systems, technical services and management consulting. Several ATeam partners who contributed materially to this article and supported the implementation at Western Global.

WESTERN GLOBAL AIRLINES

For those readers not familiar with Western Global, the company was formed about eight years ago and has sixteen wide-body aircraft flying an international network. What makes Western Global unique is that the operations take the aircraft all over the world (Figure 1) so they are sometimes disconnected from the technology which means that all flight mechanics and flight crews have iPads and Flyaway kits.



Figure 1

“... technology has now created an environment in which we can confidently outsource to Cloud solutions, the infrastructure and platform and Software as a Service (SaaS) approach.”

As we went to implement an MRO system, we of course considered the footprint and the operations plus we made some decisions around being able to work off-line, having low bandwidth connectivity and being able to update work accomplished when back to a home base. We also looked very closely at the way we distributed our inventory. Much of Western Global's operation is driven by clients and contract customers so the inventory does get moved depending on the season and the customers that we have at the time. Also, Western Global does use each aircraft as an inventory stores' location, so we'll look at how we set that up in the system to follow each aircraft and, essentially, manage the Flyaway kit for inventory, allocation and all of the functionality of the technology for material management in eMRO.

THE MRO ATEAM

Cristian Santos: Partner who leads Engineering, Maintenance Program and Technical Services at the MRO ATeam

Cristian's diverse technical experience in US-based and EASA operators complements his deep IT technology skills. At Cargolux, the largest all-cargo airline in Europe, Cristian was a systems engineer for eight years and a Trax super-user. He implemented the Trax system for the first Boeing 747-8 freighter. Cristian then attended Embry-Riddle Aeronautical University and achieved his Master's Degree in Aviation Management. While leading the MRO ATeam Cristian ensured all OEM SGML data was loaded for multiple fleets and built the IPC and maintenance program in eMRO for Western Global.

Frank Milillo: Partner who leads the MRO group at the MRO ATeam

Frank has extended his long career in commercial aviation by joining the MRO ATeam. He held several senior leadership positions within major airline TechOps divisions, specifically line maintenance, base maintenance and quality control. Frank is currently supporting the Western Global Airlines base maintenance with

“... we also validated compliance, the ‘dirty fingerprint’ records and made sure that we had good data in the legacy systems. ”

specific focus on Safety, Quality, Schedule and Cost, plus closing technology gaps with the addition of the Trax eMRO solution. While leading the MRO group, the ATeam completed physical inventories and implemented full material management to control inventory, production control and task accomplishment. Frank and the WGA team have introduced efficient processes matched with the latest Trax eMRO technology.

Steve Bogie: Partner who leads Flight Operations at the Aero ATeam

Steve has over 25 years’ experience in airline Operations and Technology with tier 1 and tier 2 carriers. In the context of this article, the AeroATeam supports the broader operations picture beyond MRO with systems operations control, Flight Operations, crew management, dispatch and the broader critical functions within an airlines’ Operations IT portfolio.

A UNIQUE APPROACH, MANAGED SERVICES FOR MRO IT

As with any big project, people are the foundation of success; in this case Western Global Airlines partnered with the Aero ATeam to carry the heavy load through the eMRO implementation. What’s unique about the Western Global project is that the MRO IT Managed Services implementation and support strategy was defined well before COVID. We have to hand it to the leadership at the business for their decision to upgrade the technology with the new MRO IT managed services approach. This approach has proved to be very effective, especially since the industry and the world has really changed in response to the impact of the pandemic.

IT Managed services is common in many industries but, in aviation and, more specifically, in TechOps, sometimes we are reluctant to release control to a fully managed IT as a service approach. Modern technology has now created an environment in which we can confidently outsource to Cloud solutions, the infrastructure and platform and Software as a Service (SaaS) approach. These developments, backed by industry experienced members of the MRO ATeam

supporting the Western Global team, allowed us to move very fast with a high level of quality. It was a great achievement for the teams and the Company overall. The next phase of the managed services approach for Western Global is advancing the use the deep functionality of eMRO during an unprecedented demand period for Western Global Airlines.

Global Western TechOps and MRO ATeam implemented this new MRO IT system in the past few months and that was accomplished with a strategy around managed MRO IT as a Service (Figure 2).



Figure 2

In summary, the approach of this project has been to outsource not only the licensing but also a full Cloud Hosting, implementation and ongoing technical support.

PHASED IMPLEMENTATION APPROACH

This article is more about the strategy for the technology but readers will know that you can take many different approaches for the implementation (figure 3). At Western Global we decided that a fast implementation through a phased approach was critical for a number of reasons. There were some solutions that were not supported; time was of the essence, of course, because of our Ops tempo and there was a need to implement the technology as soon as possible. The implementation was essentially divided into two phases.

Phase 1

This initial Phase included, as readers might imagine, some foundation building plus we went through a system assessment and selection process (figure 3); we also validated compliance, the ‘dirty fingerprint’ records and made sure that we had good data in the legacy systems. That did result in a good amount of data cleansing and pretty typical DAV (Data Analysis and Validation) and ETL (Extract, Transform, Load) exercises.

Once we’d decided to adopt the managed services approach, we looked at the technology, both the software, infrastructure and platform as a service approach and, because of the resources available at Western Global as well as the amount of effort it takes to implement an MRO IT system, we felt that pulling in some experienced people to help with this was the best approach. We worked with the MRO ATeam and through phase 1 they gave us a lot of help with sizing the project to the airline itself, with business process mapping and all of the documentation; we also had the developers building the interface and integrations needed for corporate systems.



Western Global - Business Action Teams
MRO ATeam – Process Development Sessions



Phased Implementation Approach

Phase I	Phase II
<ul style="list-style-type: none"> ■ System Assessment ■ Compliance Validation ■ Data Cleansing DAV/ETL ■ Technology-S/I/PaaS ■ System Integrations ■ Business Process Mapping 	<ul style="list-style-type: none"> ■ Inventory & Material Management ■ MOC Logbook/Defect Control, Delay/Canx ■ Compliance Tracking ■ Maintenance Training ■ QA Audit ■ Electronic Task Cards ■ Documentation/SRA
	<ul style="list-style-type: none"> ■ MRO Heavy Maintenance Process Integration ■ Production Control ■ Labor, Tooling, Materials, NRC ■ Engine Shop Production Management ■ Line Mix iPad Integration ■ Facility Capacity and Resource Planning ■ Advanced Materials Management ■ RFID FAK Management ■ Ground Support Equipment



Western Global’s 160,000 sq. ft. in-house Maintenance, Repair, and Overhaul (“MRO”) facility reduces maintenance cost & fleet downtime, improves reliability & utilization and drives profitability.

Figure 3

The second column in phase 1 (figure 3) includes, primarily, the functionalities on which we focused. The core competency of inventory and materials management was key; we undertook physical inventories of the larger stores’

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“... in Phase 2 we rolled out the MRO Heavy Maintenance functionality, primarily in third party MROs and our Shreveport Heavy Maintenance facility where we will be using the production control features and the resource management as well as shop functionality.”

locations in Fort Myers as well as Shreveport Louisiana at our MRO facility. Once that foundation had been started for materials, we ran several parallel workstreams with maintenance control, for defects management also managing a lot of the operational needs for delays, cancellations and Tech Services. We did break out compliance tracking which is the lion's share of the work around engineering and records and maintenance program tracking. Another initial phase was training and quality control audit. One highlight from what we did for upgrading the maintenance program was importing the SGML Task Cards and also the Part Master for the IPC, the illustrated parts catalog was obtained in SGML format and we were able to import that into the eMRO system so we had one system of record for SGML data from Boeing. We also focused on the safety risk assessment and documentation, as a deliverable in Phase 1.

Phase 2

The next phase was more complex; first building on the foundation of Phase 1, in Phase 2 we rolled out the MRO Heavy Maintenance functionality, primarily in third party MROs and our Shreveport Heavy Maintenance facility where we will be using the production control features and the resource management as well as shop functionality. We're fortunate inasmuch as the mechanics at Western Global have iPads and so we'll be rolling out more functionality to front-line mechanics as well as distributing iPads to the Heavy Maintenance facility to get the most out of the technology.

A number of other advanced materials management tools as well as RFID for the Flyaway kits and loading ground support equipment are on the roadmap in future phases.

MANAGED IT AS A SERVICE

The managed service strategy that was adopted at Western Global included four elements. The MRO ATeam worked with us on all of these elements and we're comfortable with the experience of all the partners on the team.

1. Licensing

The first element in the structure is licensing. Western Global relied on the MRO ATeam to be a broker of software; they understand all the tools in the industry and were able to work with the sales people of those providers in the selection process to make sure the solutions selected would be a good fit for the company. ATeam is a reseller and offers an SaaS (Software as a Service) licensing options so that users can have just one place to go to manage their licenses.

2. IT Technology Hosting and Integration

The technology hosting is a key part of the offering that Western Global chose; that is, a fully hosted AWS (Amazon Web Services) environment and that was built with Trax USA Corp. Trax also has good experience in hosting but Western Global decided to go to one supplier as the best approach. So, with the experienced AWS professionals on the MRO ATeam, we were able to build a secure environment to host the software tools needed for the MRO IT project.

3. Implementation and Management

Implementation, of course, is a big part of the project and having experience with the implementation was key. We did draw up an implementation plan that fitted the project and Western Global team very well. We used the ATeam partners who were able to leverage their experience and understand what it needed to be successful with the implementation. Lots of documentation, lots of business process mapping, lots of critical steps, of course, in training and robust testing prior to rolling-out the software.

4. Maintenance, Engineering and IT Tech Services

We are currently, at the time of writing, in a support phase which allows us to have experienced people supporting the product. There is a 24/7 Helpdesk to which we have access and that is staffed with people who understand if there are problems with either the infrastructure or the software or even the business processes that were defined, there is just one place where we have to go to get answers for end users. This is a key feature in managed services to allow Western Global to have full support from the software application, hosting, implementation business processes and then, continuing system administration and support.

MRO IT Licensing Options

MRO ATeam offers value-added-reseller (VAR) and software-as-a-service (SaaS) licensing options for aviation industry leading solutions. There are a number of licensing options available to users.

- As industry clients to MRO software providers for over thirty years, MRO ATeam has teamed with numerous solution companies to offer turn-key licensing options.
- MRO ATeam licensing models offer a low-entry-cost approach to delivering modern solutions which would be otherwise cost prohibitive to many operators.
- License packaging also eliminates separate agreements, negotiations and maintenance costs. MRO ATeam also eliminates costly add-on integration costs for separate solutions.
- Furthermore, licensing with MRO ATeam doubles users' level of support. While the ATeam is their primary level of support they will also have the software OEM secondary support as needed.
- Combining licensing options with hosting and services results in reduced total solution cost.

IT Hosting and Integration

Some of the benefits to be gained from a managed approach for the IT implementation include:

- MRO ATeam Technology group has accredited and certified hosting professionals dedicated to maintaining operational performance and reliability of users' systems.
- Advanced cloud computing infrastructure is available with secure single-sign-on access, redundant servers, automated backups and high-speed response time to meet users' operational needs.
- IT professionals who know the MRO IT industry and the aircraft maintenance business needs deliver the specialized service with all the technological advances available.

“Once TRAX eMRO has been implemented at Western Global, all the modules in the foundation layer will be active which will, in turn, allow us to integrate with the Business Intelligence (BI) layer that's managed by the ATeam.”

- MRO ATeam is the Tech Ops liaison to customers' corporate IT department professionals to ensure internal policies are followed and operational needs are met.

MRO ATeam has certified cloud credentials, advanced application interface developers and modern cyber-security specialists with airline hosting experience. Again, technical hosting and integration is key when clients need to know the software and the application that they're implementing and how it's going to perform in the Cloud environment.

Implementation and Management

Integration with the business is key with the implementation side; knowing the business and how the business processes work is a real benefit from having a strong team to help with the implementation. MRO ATeam tailors support for client needs and helps define the requirements for success. No extra work, costs or surprises but full-service, one-stop implementation support, system administration, data migration, IT integration, business process development, documentation and training. MRO ATeam has hands-on, end user and leadership experience with implementation and management of the leading MRO IT solutions backed by aviation professionals with decades of relevant experience. They have worked for airlines and supported operations for over thirty years; having advanced the use of technology in our industry at the point of execution, the service is system agnostic and can support all solutions. On-going support is offered at an outsourcing cost lower than maintaining internal resources with significantly more experience.

Technical Services Defined

MRO ATeam Tech Services delivers 24/7 support and resourcing with IT, Maintenance and Engineering business professionals. There is dedicated support and a technical staff at the MRO ATeam who provide technical services and that is

CASE STUDY: WESTERN GLOBAL AIRLINES

a key factor in the success of the whole package. Some of the services offered include maintenance of critical technical staff. Clients have no need to worry about recruiting and retaining technical staff because ATeam maintains US-based technical staff in maintenance operations, cloud management, application and interface support for flight operations, accounting and HR. Another service is dedicated support from a 24/7 help desk. Support ranges from immediate response for technical issues and project planning for tactical support, to strategic integration with maintenance/engineering and corporate IT leadership. The service includes a dedicated web-based customer portal, ATeam Portal, which rolls-up all communication, documentation, links and technical management of the MRO IT solutions. There are also custom development, reporting, alerts and dashboard design: The Business Intelligence (BI) reporting tool is delivered with the SaaS licensing. ATeam supports a super-user community to leverage BI reporting and ensure full value from MRO IT applications.

BUSINESS INTELLIGENCE LAYERS

All of the foregoing leads us to ultimately working on the Business Intelligence layers (figure 4). Once TRAX eMRO has been implemented at Western Global, all the modules in the foundation layer will be active which will, in turn, allow us to integrate with the Business Intelligence (BI) layer that's managed by the ATeam. This, of course, reflects the AWS environment and a lot of the logic and scripts that are built-in for analytics and alerts.

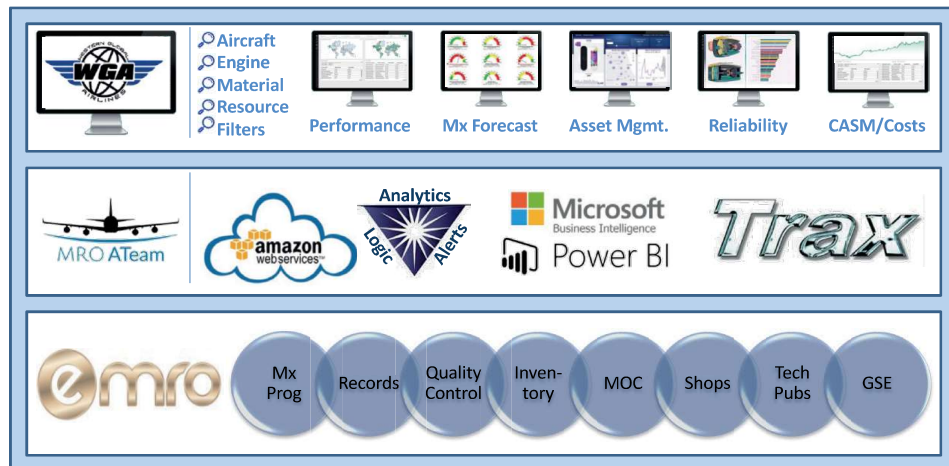


Figure 4
Ultimately, Western Global will have a Business Intelligence layer that will be able to produce dashboards and customize these dashboards for the business across any number of data points from all of the BI tools.

JIM BUCKALEW



Jim Buckalew recently joined Western Global Airlines as SVP Technical Operations and Technology. Over thirty-years, Jim has led airline Technical Operations teams, MRO and Operations Technology for large commercial passenger and cargo airlines, government contract operators and consulting firms.

WESTERN GLOBAL AIRLINES



Western Global Airlines is an American cargo airline based in Estero, Florida. The company's services include ACMI charters, commercial charters and military charters. Their main hub is located at Southwest Florida International Airport in Fort Myers, Florida. The business was founded on March 6, 2013, by Jim Neff. It was certified by the United States Department of Transportation on February 24, 2014 with FAA approval being granted on August 1, 2014 for operations using the McDonnell Douglas MD-11F. Boeing 747-400 freighter operations were approved by the FAA on November 16, 2015 and Department of Transportation approval was granted on May 25, 2016. In July 2018, the company established a 160,000 sq ft (15,000 m²) aircraft maintenance facility in Shreveport, Louisiana, capable of housing three wide-body aircraft simultaneously.

MRO ATEAM



The MRO ATeam is one of the divisions in the AeroATeam group which has proven industry experienced people you know who offer one-stop solutions in MRO IT, application development, technology hosting and technical services, and airline operations. The ATeam advises and supports airlines in the areas of Operations and MRO IT licensing, hosting and integration, implementation and management, and technical services. The ATeam also helps airlines in the evaluation, selection and procurement of appropriate MRO IT Solutions.

TRAX EMRO



eMRO is a device-agnostic application designed to cater to virtually every aspect of aircraft maintenance and fleet management. Deployed via any web browser, this technology lets users manage their maintenance operation from a desktop or remotely from a phone or tablet. eMRO is a fully integrated product which allows complete information flow between the modules throughout the system. The software provides the means to manage and maintain all information generated by a maintenance organization.

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