American Airlines Adopts Mobile Solutions and Increases Labor Productivity

CORENA Pinpoint Mobile for Aviation MRO
Flatirons Solutions helps American Airlines adopt mobile solutions and increase labor productivity

American Airlines Group, headquartered in Dallas, Texas, is the holding company for American Airlines and US Airways. Together with wholly owned and third-party regional, the airlines operate an average of nearly 6,700 flights per day to 339 destinations in 54 countries.

American Airlines was an early adopter of mobile technology. In fact, it was the first major carrier to get approval by the FAA for use of Apple’s iPad in the cockpit. That was back in 2012. Now their tablet deployment is one of the largest corporate deployments in the U.S. with 33,000 devices in the fleet. When the initial roll-out was to be expanded to encompass ground personnel such as mechanics, American Airlines came to Flatirons Solutions for help.

The Challenges

The driving factors behind American’s mobile line maintenance program was the vision to move to a paperless operation. As for similar organizations, American’s line maintenance was encumbered by manuals that were 1,000s of pages with info that was difficult to find quickly.

From their experience with deploying mobile Flight Ops solutions they had learned the advantages of managing information electronically and putting information at employee’s fingertips. Now they wanted the aircraft mechanics to get in on the productivity-boosting capabilities of tablets. And the mechanics had five good reasons for wanting it more than anyone else:

1. They wanted technical data at their fingertips to cut back time spent running back and forth between the airplane and the shop floor kiosk PC.
2. They wanted to know if a part is available to fix the airplane, rather than having to refer to a minimum equipment list or pushing maintenance to the night.
3. They wanted to know what the status of the airplane is, such as what changed last time.
4. And they wanted to spend less time waiting for someone to give them a work assignment on a piece of paper.

“The challenge of connectivity drove us to adopt supporting offline capabilities”
Blair Gregg, Managing Director, Technical Systems Strategy, M&E, American Airlines
Other challenges that needed to be resolved were:

- **Getting regulatory project approval.** Introduction of new aviation technologies and processes requires approval from FAA, who is the prime responsible for civil aviation safety.

- **The issue of connectivity.** Even when moving from a terminal wifi to an outdoor cellular network to an aircraft cockpit where signal is often completely lost, the mechanics need to be able to access information.

- **Security and information access issues.** A consistent level of security, role/group administration, and access control needed to be applied across a range of device and OS types

### The Solution

The approval from FAA was easy to get. Together with Flatirons Solutions representatives, American Airlines sat down with the CMO (Certificate Management Office) and explained to them how the tablet would stop mechanics from having unrevised data. The regulators loved the systems’ built-in protection, and the project got the necessary buy-in.

By the end of 2014 American Airlines had deployed more than 1,700 Android and iPad tablets equipped with CORENA Pinpoint Mobile to technicians stationed around the globe. More than 1,200 CMMs (Component Maintenance Manuals) have been digitized and technicians have gotten unprecedented access to large volumes of remote and up-to-date information.

The publishing process has been tightened up, and American Airlines knows exactly what revision of which manuals is on every one of the tablets. A software dashboard tells if a manual has been revised or not, and by using drop-down boxes, the mechanics can quickly and easily drill down to the specific details or most current information they require at the point of performance.

### Examples of what mechanics use the tablets for

- **Task and gate notification**
  The mechanic can be anywhere on the shop floor; the tablet will ring indicating he has an assignment and at what gate.

- **Task description**
  When he goes to the specified gate the tablet indicates what specifically has to be done to the airplane.

- **Maintenance history**
  Lets the mechanic see what has already been done.

- **Task sign-off**
  When the task has been resolved, the mechanic will close the maintenance tasks and go to the next plane.
Smart switching solves connectivity issues

The solution solves the challenge of connectivity by offering smart switching between online and offline modes. The tablets are all wi-fi and cellular capable allowing online mode wherever a wi-fi or cellular network is available. But sometimes that just isn’t enough. So as soon as the tablet loses the signal the offline capabilities kick in and allow the mechanic to complete his maintenance, repair and overhaul tasks without a network signal.

Samsung tablets and iPads run side by side in a single access system

American Airlines is using a role-based single access system requiring only an employee number and password. Initial security issues with iPad have been resolved, and Samsung tablets and iPads are now running side by side in a system agnostic and tablet neutral HTML 5 environment.

“Getting information at the mechanics’ fingertips is so much easier than it was two years ago. You go from a paper world where you wonder if the information was revised and if you’re in the right revision... and it could take a week to get there. Today it takes minutes to get revisions from tech pubs to every mechanic around the world.”

Blair Gregg, Managing Director, Technical Systems Strategy, M&E, American Airlines
The Results

AA leadership now has their mechanics where they want them, at the airplane with everything they need to fix it right at their hand. The tablets keep mechanics moving directly from one plane to the next so they don’t lose time going back and forth getting assignments and information to perform tasks.

Through improved data access, communication and collaboration, the solution has truly created more efficient workers plane-side.

Results At-a-glance

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanic time saved</td>
<td>10+ min PER TASK</td>
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<tr>
<td>Project execution time</td>
<td>6 months</td>
</tr>
<tr>
<td>Degree of revision control</td>
<td>100%</td>
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<tr>
<td>Time to publish new revisions</td>
<td>5 min VS. 1 WEEK BEFORE</td>
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Benefits

**Improved labor productivity**
Quick and easy access to all maintenance documentation at the point of performance, with both on-line and off-line modes, reduces trips to PC stations so technicians can work smarter. Other features in CORENA Pinpoint Mobile that will help mechanics do their work more quickly are the interactive fault troubleshooting, dynamic wiring diagram navigation, and the bookmarking and annotation features allowing personalization of frequently used information.

**Reduced heavy maintenance span time**
Using CORENA software to access exactly the information required at the point of performance has resulted in documented time savings of more than 50% compared to legacy processes.

**Increased dispatch rates and higher aircraft utilization**
With less time spent on finding the right information, CORENA Pinpoint Mobile will help you maximize asset utilization and get your aircraft back in the air faster.

**Reduced human factor errors**
Improved device and worksite ergonomics afforded by tablets means fewer errors relating to bulky, outdated procedural documentation.

**Reduced costs**
Thanks to CORENA Pinpoint Mobile’s on-demand electronic publishing capabilities, the cost to produce and distribute technical documentation to mechanics, planners, and flight crews will lower dramatically.
ABOUT FLATIRONS SOLUTIONS
Flatirons Solutions provides consulting, technology, and outsourcing for content lifecycle management. For more than 20 years, it has served global Fortune 1000 customers in aerospace, automotive, electronics, financial services, government, healthcare, and publishing. Its customer engagements help organizations efficiently deliver the right information, at the right time, to the right people by leveraging structured content and digital media — Turning Content into Knowledge®.

ABOUT CORENA SUITE
The CORENA Suite from Flatirons is the leading solution for content lifecycle management developed specifically for organizations that rely on mission-critical data to design, manufacture, operate, or maintain complex assets over product and service lifecycles as well as across their business networks. For more than 25 years, the world’s leading airlines, aerospace manufacturers, energy companies, automotive companies, and military organizations have used the CORENA Suite to create, deliver, consume, and optimize large volumes of technical information throughout its lifecycle. Flatirons’ customers rely on the CORENA Suite to improve customer satisfaction, labor productivity, and asset utilization so they can maintain their competitive advantage.