Cutting The Cord
Making Mechanics More Mobile With Tablet Computers

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The Mobile Revolution

As tablet computers make inroads in the workplace, their application to aircraft maintenance is becoming increasingly obvious. This is partly due to their portability and the availability of easily downloadable apps, which can be used to access and display selected maintenance information for ready reference – anytime, anywhere. In effect, the tablet computer revolution has given users a new sense of mobility by severing the umbilical cord to wired computers and burdensome paper information.

During the repair process, ease of access to technical data on a small portable digital device can be a productive time saver. Desktop computers in an aircraft maintenance hangar or component shop usually reside at designated work stations, which may be located at a considerable distance from the aircraft where the mechanic is working at the time. Any questions raised during the repair process, concerning procedures or parts, could mean several trips back to the computer for answers – assuming the computer is available when needed.

Without a mobile, tablet solution, the mechanic may also need to take printed copies of information critical to a repair scheme to the aircraft. This can include maintenance procedures, airworthiness directives (AD), manufacturer’s service bulletins (SB); or even type certificates, supplemental type certificates (STC); checklists and minimum equipment lists (MEL). This not only adds to printing costs, but presents a risk that the printed document could remain in the work area and be reused long after the information it contains has been updated. Also, rather than going to the computer, there is the temptation to rely on memory, instead of a manual, which implies a serious safety issue.
Technical Publications for Mobile Devices

Until recently, tablet computers in aircraft maintenance have been very limited. But that changed in 2011, when California-based ATP, the world’s largest single-source supplier of aviation technical publications and compliance management technology, saw the need to develop a mobile service that would provide technical data for mechanics.

Working with customers, OEMs, and subject matter experts for more than a year, ATP introduced its HubConnect™ Mobile Service in September 2012 as the industry’s first single source solution for mobile document access within the general aviation community.

According to Jeff Seiler, ATP’s Director of Product Development, the HubConnect Mobile Service represents “a long running strategy of the company to provide the most advanced information management technologies that increase efficiency for maintenance professionals.” That strategy, he said, has been driven by growing demand from general aviation mechanics for some type of a digital mobile solution for technical data access.

Given increasing use of mobile devices, in general, the company essentially designed the HubConnect Mobile Service as an add-on component to the ATP Aviation Hub™ Online Service, which was introduced in April 2011.

Available by subscription, the ATP Aviation Hub™ Online Service, provides access to the world’s largest, single source, cloud-based aviation library service, which, itself, includes more than 750 individual maintenance libraries from over 50 manufacturers of airframes, engines, propellers, and other installed components; as well as the regulatory libraries from the FAA, EASA, ICAO, and other international aviation agencies. The pilot operating handbooks from major OEMs are also available.
The HubConnect Mobile Service is a separate, subscription-based product, available to ATP Aviation Hub Online Service subscribers. The tablet interface with this system is provided by the HubConnect™ Document Management App for iPad®, which is downloaded from the App Store from Apple. There is no charge for the app, itself, but with a paid subscription to the HubConnect Mobile Service, the app can then be activated to supply access to any ATP library subscription, with no IT assistance or training required. The iPad is currently the sole tablet computer that works with the HubConnect app, although ATP plans to extend the service to users of other tablets in the future.

“The HubConnect Mobile Service is an enabler, which gives the user access to ATP’s collection of maintenance libraries using mobile devices,” Seiler explained. “With that access, the user can create a synchronized list of publications that he needs to perform his work, but in a disconnected state away from a typical wired computer system.”

The HubConnect Mobile Service technology, which works on a 3G or 4G cellular network, or over a Wi-Fi connection, allows the user to download an entire document or just the specific section of the document required during the repair process. This selectivity is especially beneficial, because it allows the user to manage the amount of information transmitted over their data connection, and it provides optimal management of available memory on the mobile device.

In tandem with this, the selective information management and rapid download capability translates into considerable time savings, not only for the mechanic, but the director of maintenance or other supervisory staff, who can download the repair-specific documentation, and incorporate it within a digital work package.

The bottom line is that the downloaded content, managed in ATP Aviation Hub is readily at hand, and current, on the mobile device, once the technician synchronizes the data on the HubConnect app. The technician then has the ability to navigate among various publications and documents quickly – even in areas with unreliable or no cellular coverage or Wi-Fi.
Advantages of Mobile Content

By going mobile, the return on investment (ROI) on the HubConnect Mobile Service subscription costs is positive, even if the subscriber is a one-hangar, single mechanic shop or a small FBO. The ROI only increases as more people at a given facility use the system, especially those who need to move frequently around large, multi-hangar maintenance, repair and overhaul complexes. In fact, the larger the maintenance center, the greater the opportunity to generate greater ROI in productivity on the shop floor.

Tablet computers make it possible for maintenance professionals to download critical documentation, and incorporate it within a digital work package on a small, mobile, digital device that can be taken wherever it is needed. “This is the next evolution of information technology, helping insure that people have the information they need when they need it, with the knowledge that it is current,” said Seiler.

That is also the view of Steve Thimsen, Maintenance Coordinator of Moody Aviation in Spokane, Washington. A part of Moody Bible Institute of Chicago, the school includes flight and maintenance training to students pursuing a degree in missionary aviation technology. As part of their program, the students maintain the school’s 13 Cessna single and twin piston engine planes. Following a successful trial run with a single subscription, Thimsen reported that the HubConnect Mobile Service is being extended to all students, each of whom will receive iPads as they enter the program.

“We began to use tablet computers on the flight training side, because of the trend toward their greater use
in the cockpit – in general and commercial aviation,” Thimsen explained. “It is only natural for us to want to extend that technology into the maintenance hangar.”

The HubConnect Mobile service, he added, is easy to use. “We don’t have to store and update a large paper library, and there is mobility. We have at least 25 students per-class, and two hangars at this campus. Each student will be able to access maintenance manuals, wherever he or she is. We believe that the tablet computer will become the standard in aircraft maintenance, because mobile technology makes a lot of sense.”

For William Fryer, owner of 3rd Generation Aircraft Service, a Chatsworth, California repair operation for piston and turboprop aircraft, the HubConnect Mobile Service means no longer having to go on a repair job with a stack of books and a laptop. “Now you just grab your iPad and you have everything with you,” he said.

Interestingly enough, Fryer, who is also Director of Maintenance for a Part 135 charter company, pointed out that the HubConnect Mobile Service offers some advantages for the operator.

“If an airplane breaks down away from base, the pilot can have the proper manuals, accessible on the iPad for the mechanic to look at,” he stated. “You don’t have to worry about current data and compliance records because the pilot will have that with him.”

That, in fact, is a perfect illustration of the HubConnect Mobile Service’s advantage. Now, wherever the technician happens to be, he can call up whatever maintenance manuals are needed. Access to a desktop computer with preloaded, aircraft-specific documentation is no longer required.