THE PUSH TO PAPERLESS

Robert Saunders highlights the operational benefits of paperless mobility solutions

As an industry, aviation is a late adopter in many areas, one of the most obvious being the adoption of mobile devices. In the late 2000s, it was expensive and impractical for airlines and MROs to adopt mobile solutions due to device technology, inter-company IT policies and connectivity. With the advent of the Apple iPad, a less expensive more rugged device became available.

Today, there is widespread adoption of mobile devices in airlines, largely thanks to the pilot community. It is common practice to find an iPad with EFF (Electronic Flight Folder) and FCOMs loaded present on the flight deck. The introduction of mobile devices for maintenance has been much slower. The desire to 'go paperless' seen five years ago is now seen more as a requirement. Put another way, where efficiency improvements used to be optional, they are now essential.

Ultramain Systems has provided end-to-end aviation maintenance solutions for four decades, focusing on paperless mobile solutions for over 15 years. To meet two distinct areas of customer demand, Ultramain Systems offers the Ultramain® ELB and Ultramain v9 M&E/MRO solutions, each supported by separate business divisions designed for specific customer sectors.

Ultramain ELB is a full online/offline electronic tech and cabin log providing instinctive usability for flight crew, cabin crew and both airline and third-party mechanics. The application has been adopted by many airlines regardless of the M&E system they already use.

Ultramain v9 is a complete airline/MRO system capable of managing all engineering functions from aircraft/engine acquisition to disposal. Its functional modules, with strong interface capabilities, make it ideal for full system replacement while also enabling digitalisation in specific areas by adopting mobile applications and modules that integrate with existing M&E systems. This can fast-track business benefits without requiring a major system replacement.

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WHAT ARE THE BARRIERS?

Most airlines still use paper tech and cabin logs, though the introduction of Ultramain ELB faces low barriers and offers a strong business case. Adopting a proven electronic system with over three million sectors of customer experience presents low risk and high gain. Ultramain ELB has been implemented across diverse customer fleets, incorporating user-driven enhancements into the core product.

There are, of course, the inherent and tangible savings in paper usage, printing, distribution, collection, data entry and avoidance of tech records storage. However, just removing the paper should not be the main objective. There is much bigger opportunity. For longer term users of Ultramain ELB, the initial improvements in efficiency have resulted in a paradigm shift in the

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"Aircraft delays are seen as a primary measurement of aircraft reliability"

way line maintenance is managed. The initial positive impact has exceeded expectations.

AIRCRAFT AVAILABILITY

It's well known that inbound defects must be rectified or deferred until an aircraft can be removed from service for troubleshooting. Defect rectification is often scheduled during ground time made available by increasing the utilisation of other aircraft, shifting operational demands onto them. This, in turn, increases the risk of disruption if defects on other aircraft occur. The compounded effect is a higher risk of delays and cancellations.

Conversely, reduced time to rectify defects, and the avoidance of repeat defects will lead to more aircraft availability. For larger fleets, sustainable defect lifecycle reduction can provide availability to operate additional sectors without increase fleet size. This operational saving far outweighs delay cost avoidance – but is difficult to quantify.

PIREP RATE

The PIREP (Pilot Report) rate is a primary indication of aircraft system reliability. An eTL cannot make the aircraft systems more reliable, however Ultramain ELB's on-device decision support tools can lead to the reduction of repeated faults. Real-time visibility of inbound defects on the Ultramain ELB Fleet Dashboard enables inbound defects to be rectified before the next flight. This information is available without attending the aircraft, so manpower can be directed to the aircraft requiring engineering presence. This is an important contribution to the effective use of qualified engineering staff, particularly with a global shortage of engineers.

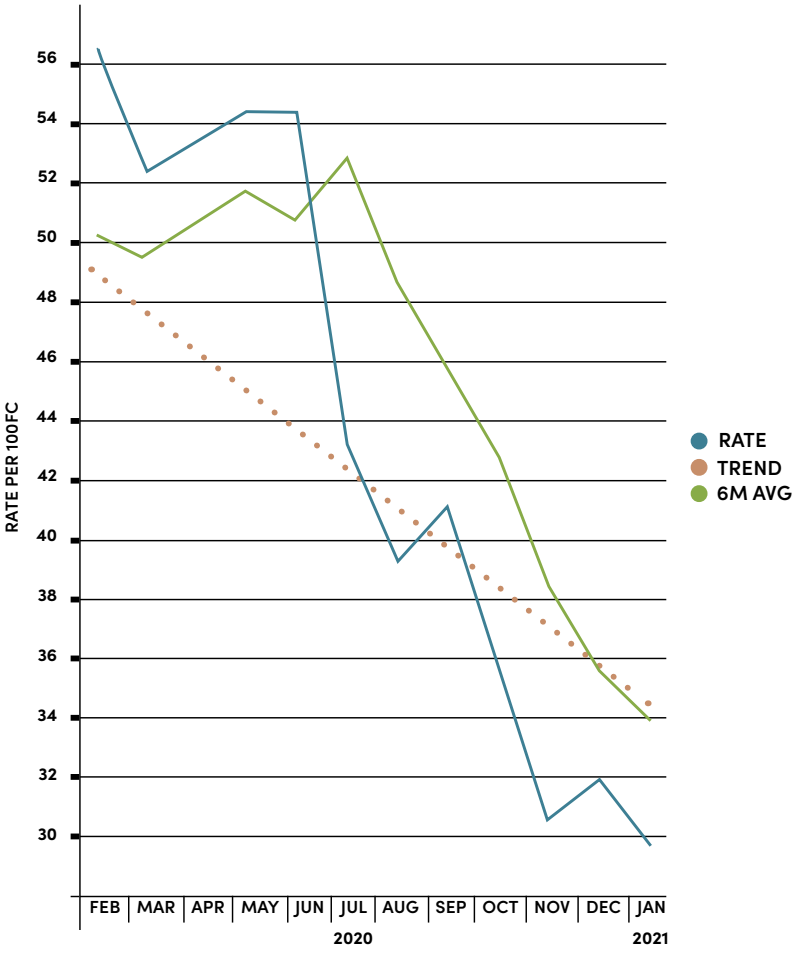
Clear system history available on the Ultramain ELB device highlights component changes and avoids repeat replacements of serviceable LRUs due to a reoccurrence of the defect. This reduces PIREPS and avoids NFF costs.

ULTRAMAIN ELB ENABLES A MORE RELIABLE FLEET

Aircraft delays are seen as a primary measurement of aircraft reliability. A reduction in initial and repeat defects will avoid the risk of a delay, but there is a wider story to delay rates.

To be more precise, dispatch reliability is a measure of the organisation's ability to react and accommodate a defect occurrence,

1. MM and v9 screens **2.** Robert Saunders, director of business development – ELB, Ultramain Systems **3.** Pilots utilising Ultramain ELB in the cockpit



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1. PIREP rate (Pilot Reports per 100 flights) showing a 29% reduction
2. Ultramain ELB in the cockpit

"The desire to 'go paperless' seen five years ago is now seen more as a requirement"

without that defect causing a delay. Real-time visibility allows for preparation.

Ultramain ELB enables optimised disruption management to avoid delays and reduce delay duration.

ULTRAMAIN MOBILE MECHANIC AND MAINTENANCE SCHEDULING

Mobility benefits in M&E or MRO are manyfold with a capable solution. As a backdrop, most airlines have outsourced their maintenance, particularly heavy checks and engine overhaul. Typically, there are multiple MRO suppliers providing services to multiple airlines. The MROs and airlines operate different maintenance systems with various levels of task card maturity. While there have been attempts by OEMs to align document standards (sort of), there are many legacy standards to cope with.

As a baseline, an airline will want to deliver consistent work pack requirements to multiple MROs and then receive consistent records of accomplishment. MROs must deal with multiple work package formats with various task card maturity. This can be from dumb PDF through to structured XML eTask cards. It's safe to say no airline or MRO is going to, or could, replace its core maintenance system to suit any one supplier or customer, so the situation is here to stay for the foreseeable future.

In recognition of this industry situation, Ultramain Mobile Mechanic is designed to operate with an existing MRO system enabling the use of multiple task card formats from PDF through to structured eTask card standards. Mechanics, therefore, have a consistent user experience regardless of the source format. It's fair to say that being paperless is a significant move forward, but consistency of structured data provides the real value though enhanced production control. This is not possible with the hours or days of latency that is the case with paper task cards. Real-time allocation of trade specific tasks to crews, auto capture of manhours, real-time update of critical path dashboards, real-time inspection and NRI counts, and much more, results in shorter base inputs.

In summary, it is the enhanced capabilities enabled by the combination of Ultramain Maintenance Scheduling (for production control) and Mobile Mechanic (for execution) that will reduce the ground time of each hangar input. For the MRO, this enables more inputs through the hangar facilities. For the airline, it means more aircraft availability to earn revenue.

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