11th Annual Conference and Exhibition

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RFID Integrated Solutions

RFID-Based Centrally Managed Aircraft Maintenance Program

Rebecca Shore, Solution Architect
RFID Integrated Solutions
May 2, 2013
Operational “Inefficiency”

- Preparation for maintenance: ~ 20% - 30% of total duration
- Documenting activities: ~ 10% of total duration

Source: Skills, rules and knowledge in aircraft maintenance: errors in context
ALAN HOBBS and ANN WILLIAMSON
A solution?

RFID is proving to be a highly effective method of aircraft emergency equipment configuration management but…

**737-800 ETOPS System Performance**

Oxygen Generator Inspection – 59 tags

Serviceability

Reader Orientation:
Held at mid-torso, no side-to-side sweep

Begin Scan (1st class cabin)

< 1.5 minutes, all generators acquired and statused

End Scan (2/3 length of cabin)

Metrics:
100% first pass yield out of 20 trials
LT reduction of 99%
There are limitations

Ref. FAA AC 20-162

Currently, RFID data is considered and limited to ancillary and supplemental data which can not be used as an authoritative source for the purpose of accomplishing maintenance tasks

So…

Boeing developed a fleet agnostic, comprehensive RFID-based maintenance program that is a departure from the current FAA advisory circular (article 7 a. 1, ancillary part marking) and which enables certain aspects of maintenance to be accomplished through the use of RFID and RFID-like technologies
Not just inventory management

• Knowing what it is and where it is, is good…

• To use that same information as an alternative means of compliance with instructions for continued airworthiness requires much more due diligence

• The consequence of failure can be severe when applied in the aerospace industry in this manner
Traceability of Compliance

**Boeing D6-84838** (the what)

**Regulatory Acceptance**

**GPM** (the how)

- FAA Operational Suitability Report (OSR)
- Boeing General Procedures Manual (GPM)
- Boeing GPM Interface Document
- Operator GPM

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*WORLD’S LARGEST RFID EVENT*

**BOEING**

**RFID JOURNAL LIVE!**
Acquiring the data
Recording data for compliance

• As-flying configuration reports reflect RFID data

• Efficient Identification of Emergency Equipment expired or approaching allowable thresholds

• Searchable by aircraft identification number
Impact on operations

Results – over 90% lead time reduction demonstrated on trial

Source: Skills, rules and knowledge in aircraft maintenance: errors in context
ALAN HOBBS and ANN WILLIAMSON
Results from China Airlines Operational Trial

CHI B744
9 minutes – all life vests, presence & serviceability
Thank You