A320 RFID Cabin Scan
Life Vest Inspection: Manual vs RFID
Cathay Dragon B-HSG (Airbus A320 – MSN 812)
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Video Link
Implementing RFID at Cathay Pacific

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Boeing Longacres Park, Renton, Washington, USA
16th November 2016
1. Summary of issues
2. RFID-enabled processes
3. Scope and savings
4. Change management considerations
5. Benefits summary
<table>
<thead>
<tr>
<th>Issue</th>
<th>Detail</th>
<th>Concerned BU</th>
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</thead>
<tbody>
<tr>
<td>Concern on encoding accuracy at induction</td>
<td>Duplicate inspection introduced</td>
<td>PLNG</td>
</tr>
<tr>
<td>Trial new type of RFID-Oxy Gen tag on all Airbus fleet</td>
<td>To ensure new tags are good for all different PSU type and location</td>
<td>ALL</td>
</tr>
<tr>
<td>Transferal of loose equipment check ownership MRO accountability</td>
<td>Procedures to be documented in HX’s procedures</td>
<td>Cabin Eng</td>
</tr>
<tr>
<td>RFID can tell items are existed but cannot avoid items from swapping locations.</td>
<td>No compliance issue as items are remained on the same tail. Is it acceptable to CX?</td>
<td>Cabin Eng</td>
</tr>
<tr>
<td>Handling of high turnover items (medical kit/ child extension seatbelt, baby bassinet)</td>
<td>New s/w design will allow reader to trigger the manual inspection and expiry date check. Training is required.</td>
<td>Cabin Eng</td>
</tr>
<tr>
<td>Concerns about overseas component change</td>
<td>Process misunderstanding</td>
<td>PLNG</td>
</tr>
</tbody>
</table>
RFID Induction Process
RFID Induction Process Flow

Prepare → Induct, enter in life limit → Upload data → Validate data → Routine Scan check

For Life controlled item, 2nd engineer will validate the DMF/EXP data are correctly input.

No action for non-life controlled item
Validate Data Step

<table>
<thead>
<tr>
<th>Category</th>
<th>PBE</th>
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<tbody>
<tr>
<td>PNO</td>
<td>802300-14</td>
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<tr>
<td>SER</td>
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<td>DMF</td>
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<td>EXP</td>
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<td>AVOX</td>
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<td>Fleet Type</td>
<td>A330P-CX</td>
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<td>Aircraft ID</td>
<td>B-LBI</td>
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<tr>
<td>Status</td>
<td>Active</td>
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<tr>
<td>Location</td>
<td>LH FWD FACE CKPT CLOSET</td>
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<tr>
<td>Alt SER</td>
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</tbody>
</table>
Life vest serviceable

Life vest expired

Life vest approaching expiry

Life vest not found
RFID Project Scope – Cabin Loose & Emergency Equipment

Wheelchair          Pocket Mask and Gloves Kit
BCF Fire Extinguisher Flashlight (Utilities)
Crew Rest Strap     Fire Sock Kit
ELT                  Fire Extinguisher (Water)
First Aid Kit       Splint Pack
Crew Life Vest      High Visibility Vest
PBE                  Survival Pack
Portable Oxygen Bottle Oxygen Mask
PTK                  Megaphone Manual Release Tool
AED Kit (Defibrillator) Passenger Life Vest
Baby Flotation Cot  BCF Fire Extinguisher
Flashlight (DME)    *Tamper Seal on life vest holder
Child Restraint Seat
Crowbar
Demo Kit
Fire Protection Glove
Handcuff Kit

Remark: * On hold until CAD approval is granted
** Suggest to exclude from RFID scan list due high removal rate
*** Subject to Part 21 approval on RFID tag attachment on Oxy Generator

*Baby Bassinet
**Inflight Medical Kit
**Child Restraint Device
***Oxygen Generator
Why? Lean Process (loose equipment + life vest)

4 month check
(Expiry date + Condition)
1) Check P/N
2) Check Qty
3) Check Expiry date
4) Check Condition

Loose equipment check
(Presence + Condition)
1) Check P/N
2) Check Qty
3) Check Condition

Combined check
(Presence + Expiry date + Condition)
1) Check P/N
2) Check Qty
3) Check Expiry date
4) Check Condition

Eliminated by RFID

Over 90% in man hours
Material and Labour Forecasting

Transformation

Demand from NRI
(Non-Recurring Inspection)

Behavioral Change

Planned Maint task
(Data is available)

Example:

1) RFID enabled aircraft report (switching from TMC to CMC)
2) Scan report (assurance of task complete)
3) Rectify report (manual inspections carried out)
4) Approaching Expiration report (e.g. for next 3 months)

Benefits:

- Assurance of material supply
- Bulk purchasing
- Staggered maintenance plan & OTP
- Project has no support from CX IT
**Benefits Summary**

- Optimized material yield
- Labour cost saving on presence check
- Savings on loose equipment check
- Labour cost saving on condition & expiration check
- Saving on O2 generation check
- Saving on life vest 4 months check
- Mitigate human factor risk
- Bulk purchasing in lower cost
- Enhanced data integrity on config. tree
- Cost avoidance on life vest yield
- Material forecasting
- Assurance of compliance
- A350 component/repair data
- Potential TRT improvement

ROI < 2 years
Observations

Change Management

Reliability
- Tag durability
- Reading performance

Operations
- Integration with existing process
- Outstation support
- Part 21 approval
- Re-induction?
- Defect?

Data Integrity
- Accuracy of legacy data input

Ownership
- Training
- Process update
- s/w testing
- Trouble shooting