Evolution of MRO Process Using Digital Tools: How TechOps Mexico Implemented M&E Software to Improve its Processes

By Juan Ignacio Lopez
In the last 10 years the way we have changed has included:

- More competitive market for airlines
- Aircraft MRO to incorporate new technology
- Changes in our processes

M&E tool to success but not itself

Safety, Reliability & Flying
TechOps Mexico

1,650 Employees
32 average age

160,000 + training hours/yr
100 + hours per employee/yr

264,700 Liters saved and recycled/yr

REVERSE OSMOSIS
Water purification

3,400 Solar panels

30% Annual energy consumption saved
Our Operation

- Capacity for 12 continuous lines and growing
- 2nd largest MRO in Latin America
- 110 Aircraft delivered last year
- Certifications: FAA, DGAC, ANAC, SMS & AS 9110

Our Services

- Airframe & Overhaul to Boeing & Embraer aircraft
- Modifications meeting new market demands (Wi-Fi, Cabin Mod.)
- Advanced NDT services
- Capacity to produce 1.7 M hours a year
2015 – Paper based MRO process

- 3.5 M pages/year for technical documentation

- Multiple systems to track and report maintenance activities
  - Access – Control the status of the maintenance visits
  - Excel – Reports and data analysis
  - SAP – Time keeping / Materials
  - Project – Planning of Aircraft visit

- No immediate visibility of aircraft status or emerging risk factors
  - Avg. 2 days to update plans

- 104 K man hrs./year in tracking documents, auditing & reporting

- Limited capability to make timely and educated decisions

- 2016 – Need to increase number of maintenance lines by 30%
Drive ultimate efficiency in your maintenance operations with production planning, tracking and proactive insight.

Featuring:
- Production Manager
- Electronic Task Cards
- Electronic Logbook
- FleetCycle® Connect
Now, totally mobile, totally cloud, totally integrated.
Implementation

• 14 week implementation to first Line Go Live

• Continuous launch of new lines

• Center on key process
  • Executing to Plan
  • Documenting Maintenance
  • Check Follow up
  • Paperwork Quality & Audit
  • Decision Making

• Cultural change
Executing to Plan

- Guarantee TAT for any A/C
- Proactive actions when things do not go as planned
- Repeat success stories
- Target efforts to solve root causes of A/C deviations to plan

Timely Decisions to meet TAT

**Before**
- Activity based
- Each line had their own plan
- 2 days avg. to revise a plan
- No link between cards & plan
- Multiple revisions on floor
- No performance metrics

**Now**
- Milestone based
- Success plans across lines
- Hours to revise a plan
- Real time updates
- Single plan
- Milestone compliance
- Root cause analysis
• Changing from ink to digital biggest challenge
• Benefits offset all efforts
Documents Quality & Audit

- On a 737 Heavy check NR
  - 4.5K WIPS = 9K signatures + 6K mandatory fields
- Electronic Signature guarantees
  - Employee number, License & Date stamp
- Audit centered on content of the document
- Reduction of 3 days on completing audit
- Quality Improvement programs

![Audit Documents Chart]

55% Avg. Docs Error Reductions
Check Follow Up

Before
- Man hour intensive
- No clear visibility
- Subject to human error
- Not readily available
- Card burn driven

Now
- System based
- Real time updated
- Single point of information
- Milestone driven
- Critical factors

Organization Goal

ONE
Decision Making – Information Driven

- Information a key asset to organization success
- Capability to obtain timely & accurate information
- Most important what to measure
- Measurements will drive organization
- Tell reality of your company
- Drive continuous improvement efforts
- Define, Measure, Analyze, Improve and Control (DMAIC) & Theory of Constrains (TOC) based projects
Inspection log book and holding cards

- TOC applied to identify activities blocking more throughput in the process

- Cards were waiting for buyback attention for more than 1 work shift

- **Actions taken:**
  - Inspectors were removed from activities non-core to their role
  - Dynamic allocation of inspectors based on workload of each line
  - Change of philosophy from “Department” to “Internal Customer Centered”

![Avg. Inspection Response Time per Card](chart)

- 90%+ Avg. Buyback Time Reduction
Results

20%  More Aircrafts delivered on Time
1/2  Day delivered before Plan
30%  Average reduction in time to close a card
55%  Average reduction in paperwork errors
THANK YOU!