



Back to the Future: *Legacy with Legs*

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Aircraft Commerce Airline & Aerospace MRO & Operations IT Conference

Miami, FL – March 8-9, 2016

Presentation Overview

- ❑ Company
- ❑ History – Multiple MRO Systems
- ❑ The Effort
- ❑ The Process
- ❑ Lessons Learned
- ❑ Where We Are Today
- ❑ Onwards and Forwards
- ❑ Q&A

Endeavor Air

Delta Airlines Inc. wholly owned subsidiary operating as Delta Connection

Fleet: 209 Total Aircraft

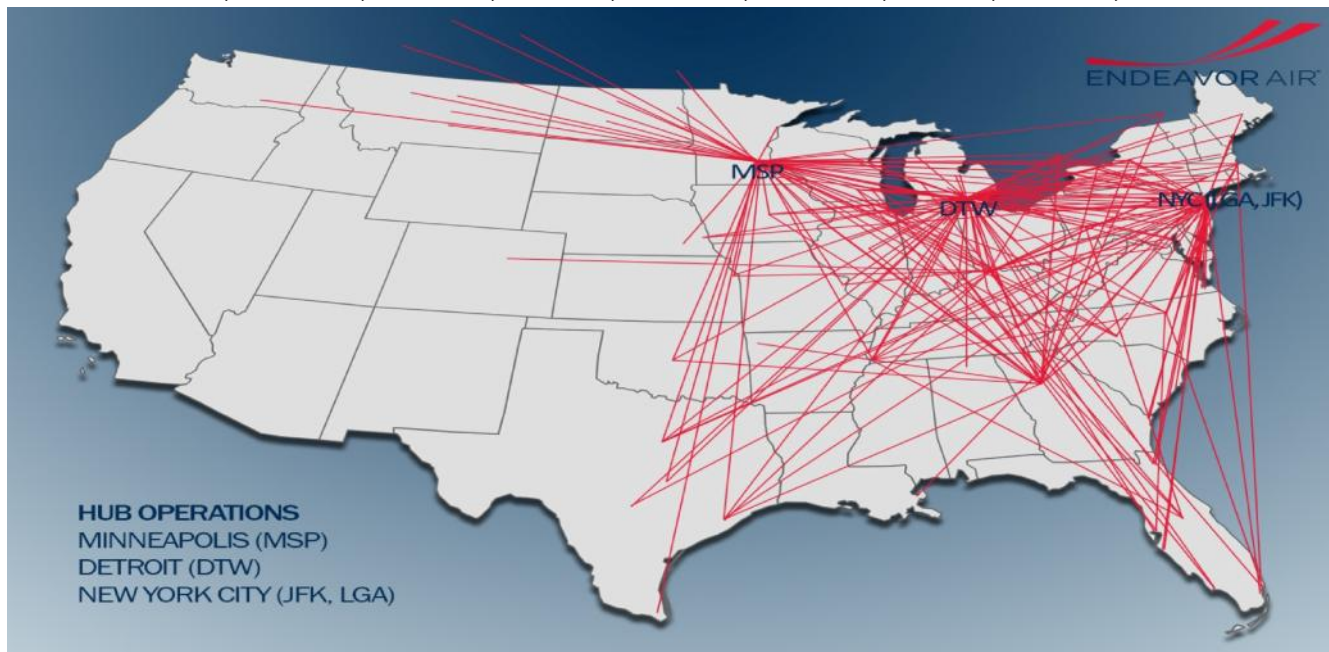
81 Bombardier CRJ-900

128 Bombardier CRJ-200 (41 operational, remainder in LTS)

~3700 Employees

~ 565 Flights per Day

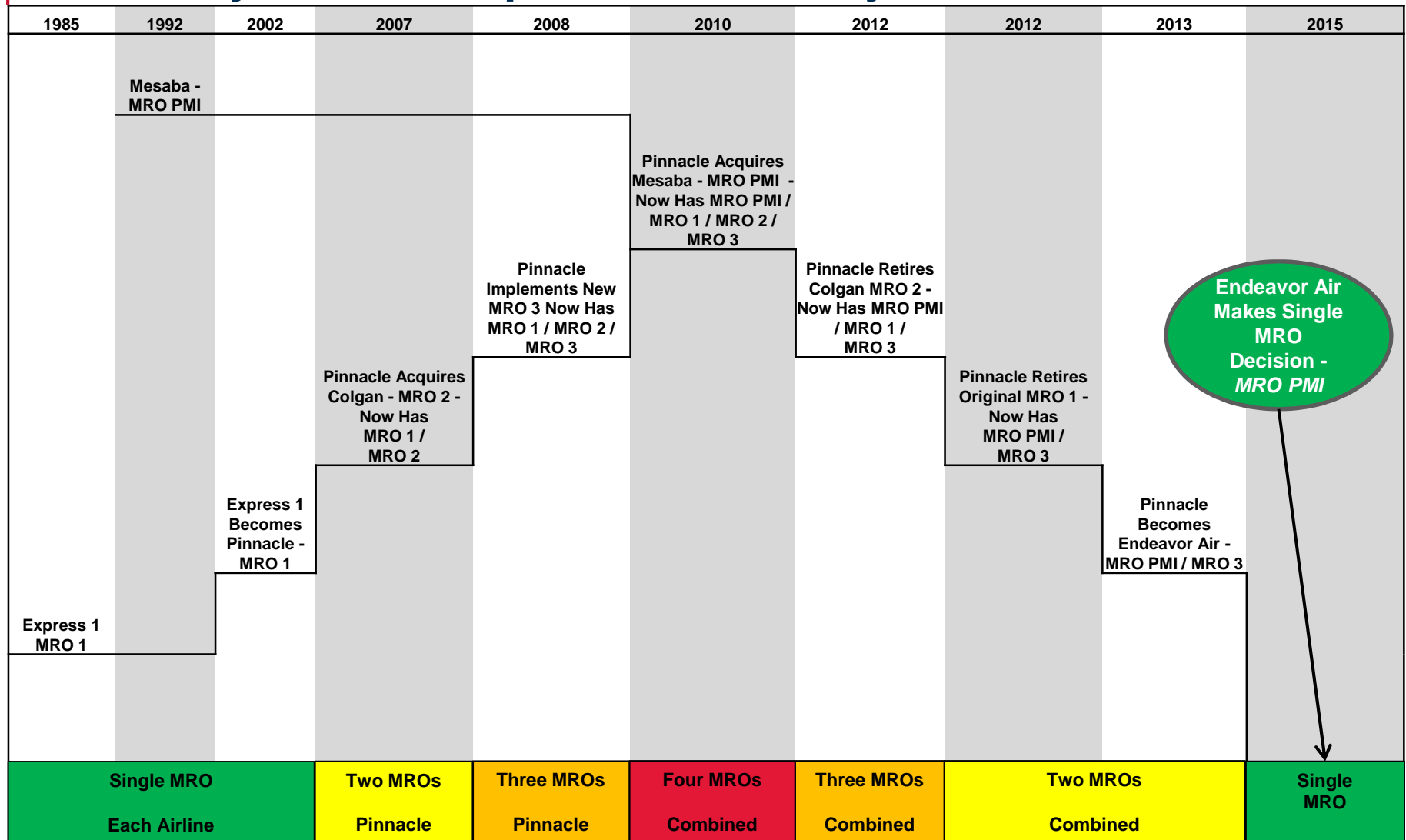
9 Mx Bases: MSP, DTW, CVG, TYS, DSM, CWA, IND, LGA, JFK



History – Multiple MRO Systems

- ❑ Mesaba Aviation codeshare with Republic in 1983
- ❑ Express Airlines 1 began in 1985
- ❑ Express Airlines 1 became Pinnacle Airlines in 2002
- ❑ Pinnacle Airlines Corp. acquired Colgan Air in 2007
- ❑ Pinnacle Airlines Corp. acquired Mesaba Airlines in 2010
- ❑ Pinnacle Airlines became Endeavor Air in 2013
- ❑ Endeavor Air is the Delta Airlines Inc. wholly owned subsidiary and flies as Delta Connection

History – Multiple MRO Systems



The Effort

- ❑ Transition 41 CRJ-200 aircraft from one MRO System into PMI
- ❑ Complete the entire effort within slightly over 6 months
 - Accomplish actual aircraft transition cutovers within approximately 2 months

The Process

- ❑ Start of the process was to establish the “Perfect Aircraft” within PMI
 - Maintenance Schedule (Program)
 - Aircraft Configuration (Parts and Positions)
- ❑ The transition of data to PMI required the following:
 - Data Extraction (Included Maintenance and Parts Data) –
 - Tools developed in-house to extract data
 - Data Conversion –
 - Big effort – data converted from original format to required PMI format

The Process

- Data Load Template Preparation –
 - Vendor supplied tools used for the purpose of data load
 - Endeavor IT and vendor support played key roles in data extraction and data load
 - Templates were reviewed for content and accuracy, then loaded
- Data Load –
 - Accomplished in-house with AeroSoft assistance
 - Accomplished as much as one week in advance to aircraft transition cutover to PMI
- Time Apply –
 - Hooked up Flight Tracking System to PMI
 - Critical step as this established the ‘line in the sand’ for the purposes of synchronizing the two MRO Systems

The Process

- Data Processing –
 - Each aircraft was migrated while in revenue operation
 - Required multiple data sources in both MROs to be kept synchronized for as long as one week until the aircraft was fully transitioned
 - Flight logs
 - Part changes
 - Task completions
 - Defects
 - Required 'catch up' of data the night of aircraft transition cutover

The Process

- Data Audit –
 - Audits were conducted at various points in the overall process to ensure data integrity
 - Extracts of legacy system data required high level of understanding to successfully validate and load
 - Once the data was loaded, various tools such as MS Access database, MS Excel spreadsheets and internally written reports provided the means to complete the audit of the transitioned data
 - Over 1 million data points audited to transition 41 aircraft
- Job Cards –
 - Created more than 1,200 J/Cs formatted in Adobe FrameMaker from OEM MTCM and aligned J/C data from previous MRO task cards
 - Uploaded Job Cards to our Job Card Server

Lessons Learned

- ❑ Size the box!!!
- ❑ Understand the functionality of your new MRO
- ❑ Purge Legacy / Dormant Data
 - We had a great deal of legacy, dormant data in our Production Environment that required purging
- ❑ Ramp up all required internal resources and system vendor support
- ❑ Intimately understand the source data and have system vendor support to assist in data extraction and data load
- ❑ Isolate the transition team members from daily operational requirements

Lessons Learned

- ❑ Right-size your configuration – in past implementations, we initially tracked way too much!!!
 - Remember, each tracked part requires a transaction to be performed and in many cases, audited by real, live people
- ❑ Data cleansing
- ❑ Test, Test, Test!!!
 - We had two physical / isolated environments
 - Allowed full Production level testing
 - Required independent and separate interfaces to the satellite apps
 - Test all processes for extracting and loading data to ensure accuracy and repeatability
 - Walk thru processes with all parties involved

Where We Are Today

- ❑ Currently in MRO PMI version 4.08 for revenue operating aircraft
 - Storage aircraft still reside in a separate MRO
 - As aircraft are removed from LTS, they are transitioned into PMI
 - Exploring future move into MRO PMI for all aircraft
- ❑ Developing and Improving the Endeavor Air PMI User Guide
- ❑ Improving PMI training
 - Established recurrent PMI training for Maintenance, Stores and QC Receiving personnel

Where We Are Today

- ❑ Communicating with end users and AeroSoft to improve system knowledge and functionality
- ❑ AeroSoft Customer Support
 - Excellent and timely support throughout the entire effort
 - Round the clock
 - Effective

Onwards and Forwards

- Exploring possible enhancements to the PMI platform with AeroSoft
 - EFLIP – PMI Time Apply interface to the Flight Operations package
 - WebPMI
 - DigiDOC – digital content management / Customer Originated Change authoring
 - Integrated with SGML/XML OEM content
 - Also usable with .PDF
 - Integrated with WebPMI for Work Order processing
 - AIM – interface to Accounts Payables
 - Interface to Bombardier Advanced Diagnostics
 - ChronicX capabilities

Q&A