Mather/Sacramento Continuous Descent Arrival
Overview

- Background
- CDA Development
- CDA Results
Mather History

- Airfield founded in 1913
- Used by the Air Force until 1995
- Re-opened for commercial service (GA/Cargo) in May 1995
- Arrival corridor complaints exceed departure corridor
- SCAS develops noise mitigation CDA
Noise Abatement Area
MHR CDA Development

- Louisville CDA initial trial period
- SCAS Noise Dept. visits UPS in Louisville
- UPS Flight Standards develops MHR CDA
- UPS incorporates CDA guidelines for MHR
MHR CDA

- First theory – Clean configuration
  - Required early gear extension in abatement area to slow down
  - Higher noise level over YOSHE
Flight Test Results

PRELIMINARY
Site 4 Comparison of Lmax and Slant Distance for UPS Flights for the Measurement Periods April-May 2004, February-March 2005, and April 2005
CDA Development

- Second theory – reduce speed
  - Overall, significant noise reduction
    - 5+ dB reduction at every sensor
  - Discovered that spoilers add noise
Flight Test Results

PRELIMINARY
Site 3 Comparison of Lmax and Slant Distance for UPS Flights for the Measurement Periods April-May 2004, February-March 2005, and April 2005

- Speed Brakes Extended
  +7/8 dB
Current CDA Parameters

- Slow down earlier than normal
- Reduce speed by utilizing flaps
- Avoid speed brakes below 7,000 ft
- Keep engines at idle
Flight Test Results

PRELIMINARY
Site 4 Comparison of Lmax and Slant Distance for UPS Flights for the Measurement Periods April-May 2004, February-March 2005, and April 2005
Crew Communication

- Inserted into UPS MHR 40-10 page
- SCAS produced inserts/flyers
- Worked with dispatch office
- Company NOTAMs
  - Direct SWR, not direct MHR
- Feedback forms
CDA ONE ARRIVAL

NOT TO SCALE
NOT IN FMC DATABASE

**ROUTING**
FROM OVER SWR VIA IMHR LOC TO CAMRR, EXPECT ILS APPROACH

**ESDIE**
D25 IMHR
8,100 ft
180 kts*

D30 IMHR
9,000 ft
200 kts*

**OHDEE**

**CAMRR**
D20 IMHR
6,500 ft
160 kts*

**SQUAW VALLEY**
113.2 SWR
D60 IMHR

**Actions for B 757 crews**

Flaps 15
Bug Vref + 20 kts
Arm APP

Flaps 5
Bug Vref + 40 kts

*± 10 kts

**DRAFT**

**NOT TO SCALE**
**NOT IN FMC DATABASE**

**Between 13,000 & 15,000 ft**

**214°**

**217°**

**30.2**

**113.2 SWR**

USED FOR NOISE ABATEMENT BETWEEN 2200 LT AND 0700 LT
CDA Vertical Profile
## CDA Noise Results*

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<tr>
<th>Monitor</th>
<th>Average UPS</th>
<th>Average 1\textsuperscript{st} CDA\textsuperscript{1}</th>
<th>Average 2\textsuperscript{nd} CDA\textsuperscript{2}</th>
<th>Best CDA\textsuperscript{3}</th>
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\textsuperscript{*dBA Lmax}

\textsuperscript{1}Trial period Feb – Mar 2005

\textsuperscript{2}Trial period Feb – Mar 2006

\textsuperscript{3}UPS 897, 15 Feb 2006
Summary

- Need for noise reduction
- CDA development

CDA Benefits
- Noise Reduction
- Fuel Savings
- Less Pollution
- Stable Approach
Questions?