Mather/Sacramento Continuous Descent Arrival

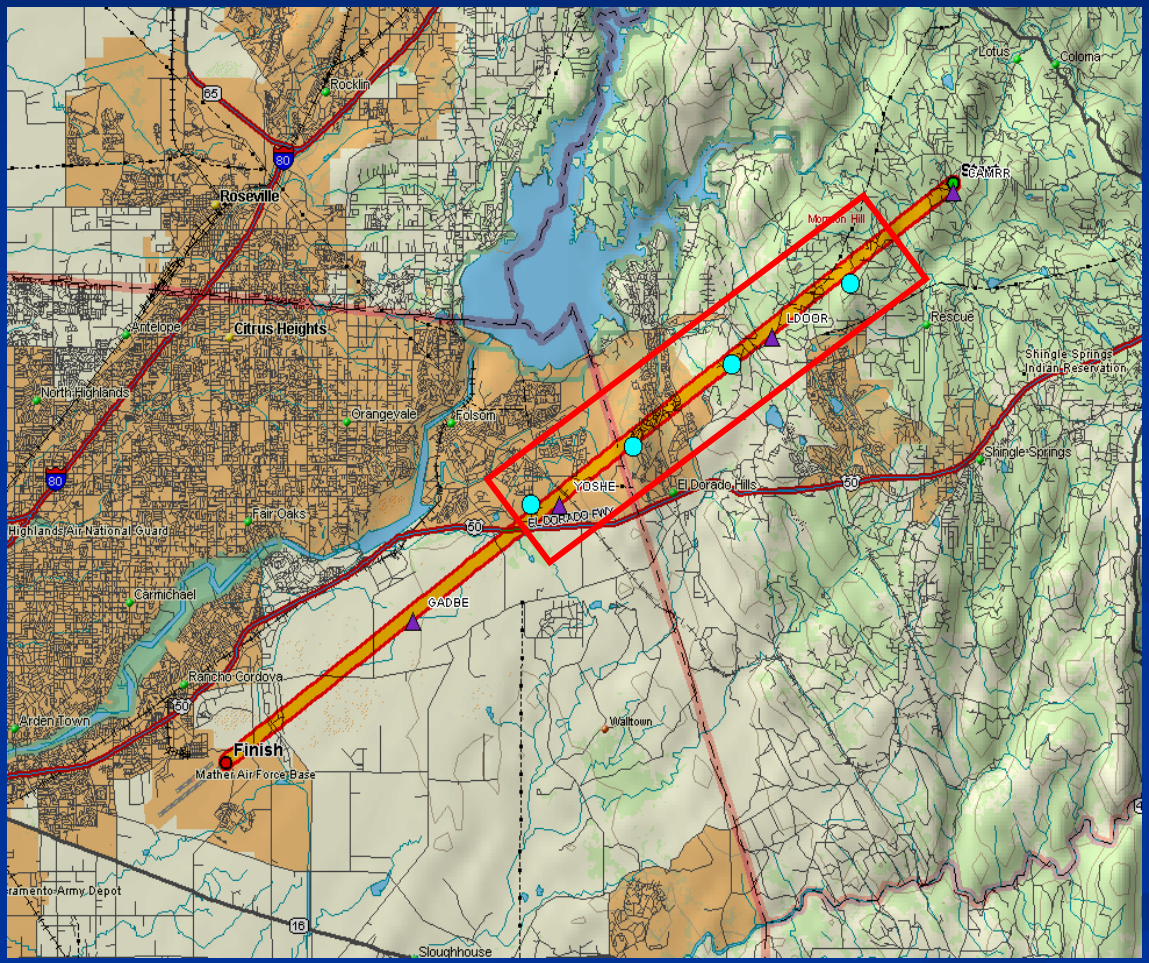
Overview

- 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



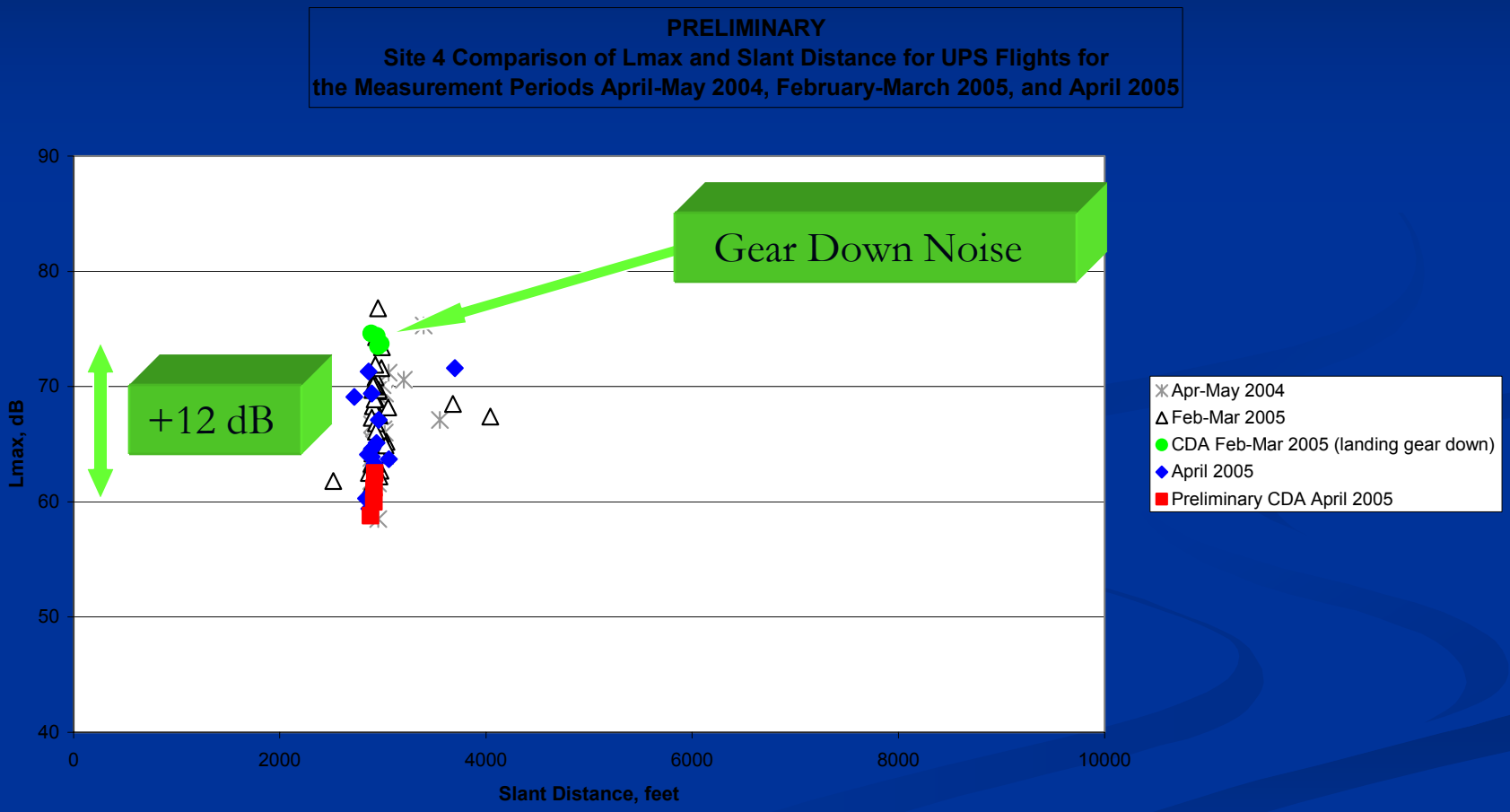
MHR CDA Development

- 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

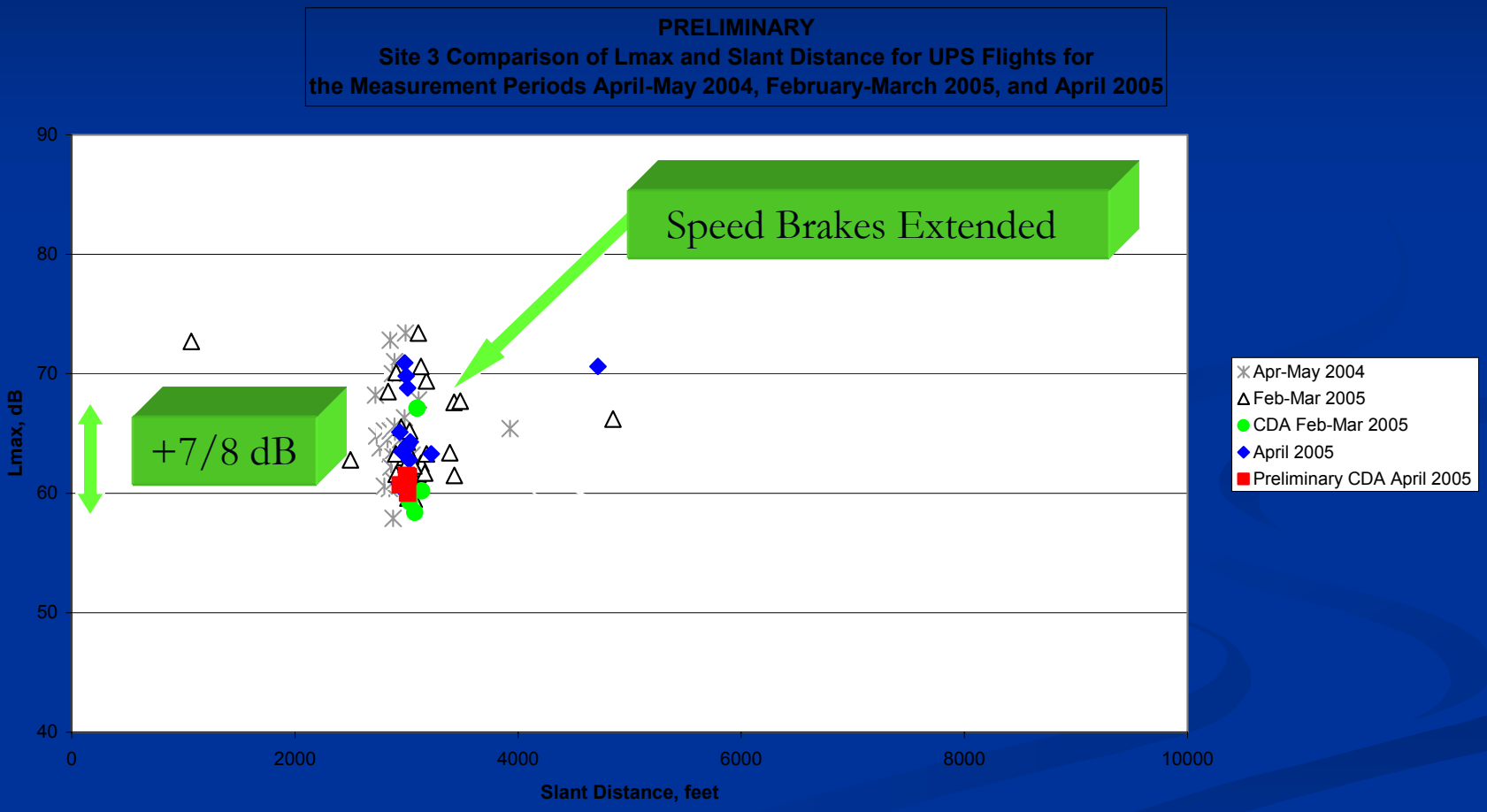
Flight Test Results



CDA Development

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

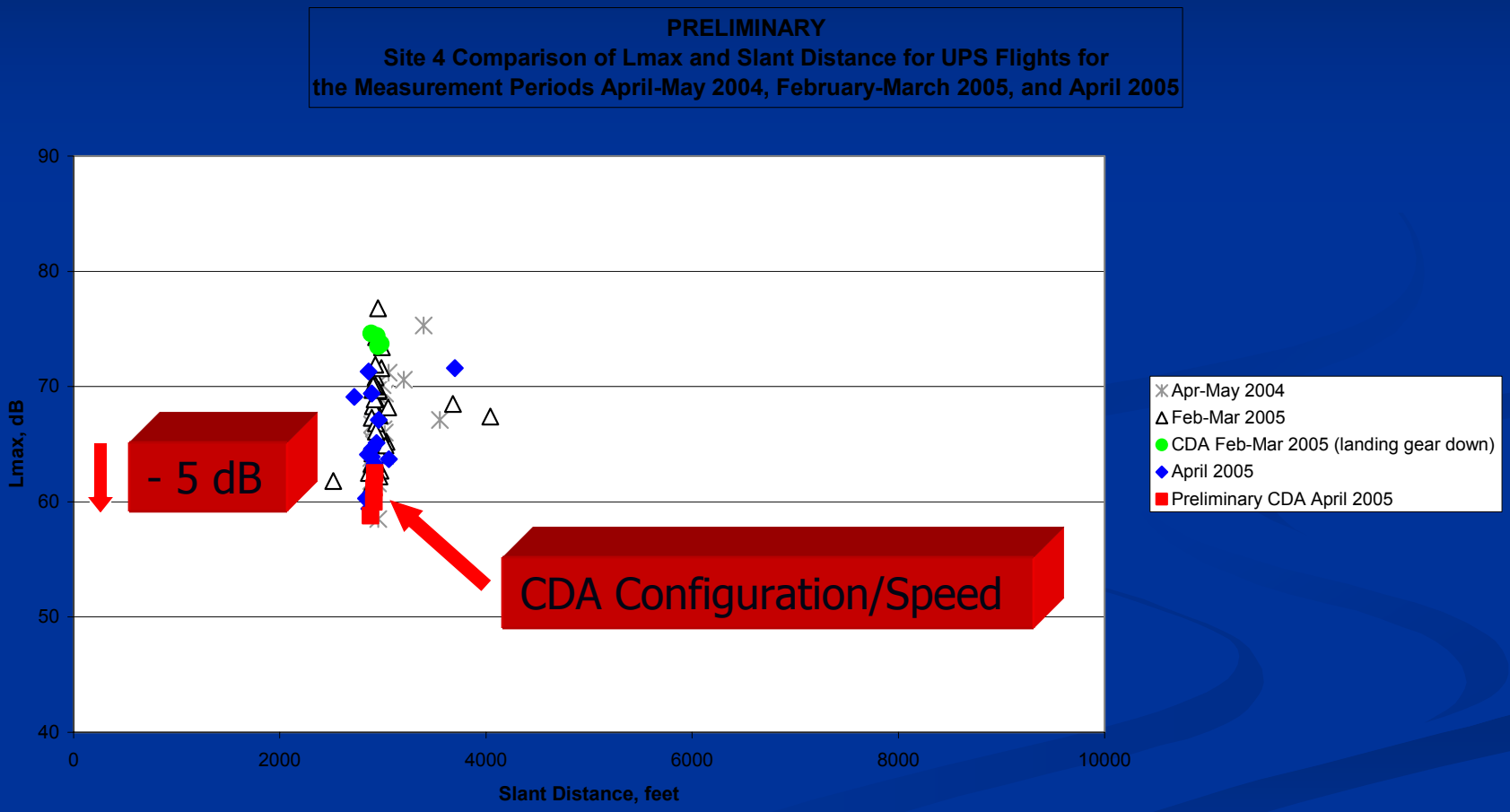
Flight Test Results



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



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*

OHDEE

D30 IMHR

9,000 ft
200 kts*

Between
13,000 & 15,000 ft

CAMRR

D20 IMHR

6,500 ft
160 kts*

217°
5

214°
30.2

SQUAW VALLEY

113.2 SWR

D60 IMHR

5

USED FOR NOISE ABATEMENT BETWEEN 2200 LT AND 0700 LT

Flaps 5
Bug Vref + 40 kts

Flaps 15
Bug Vref + 20 kts
Arm APP

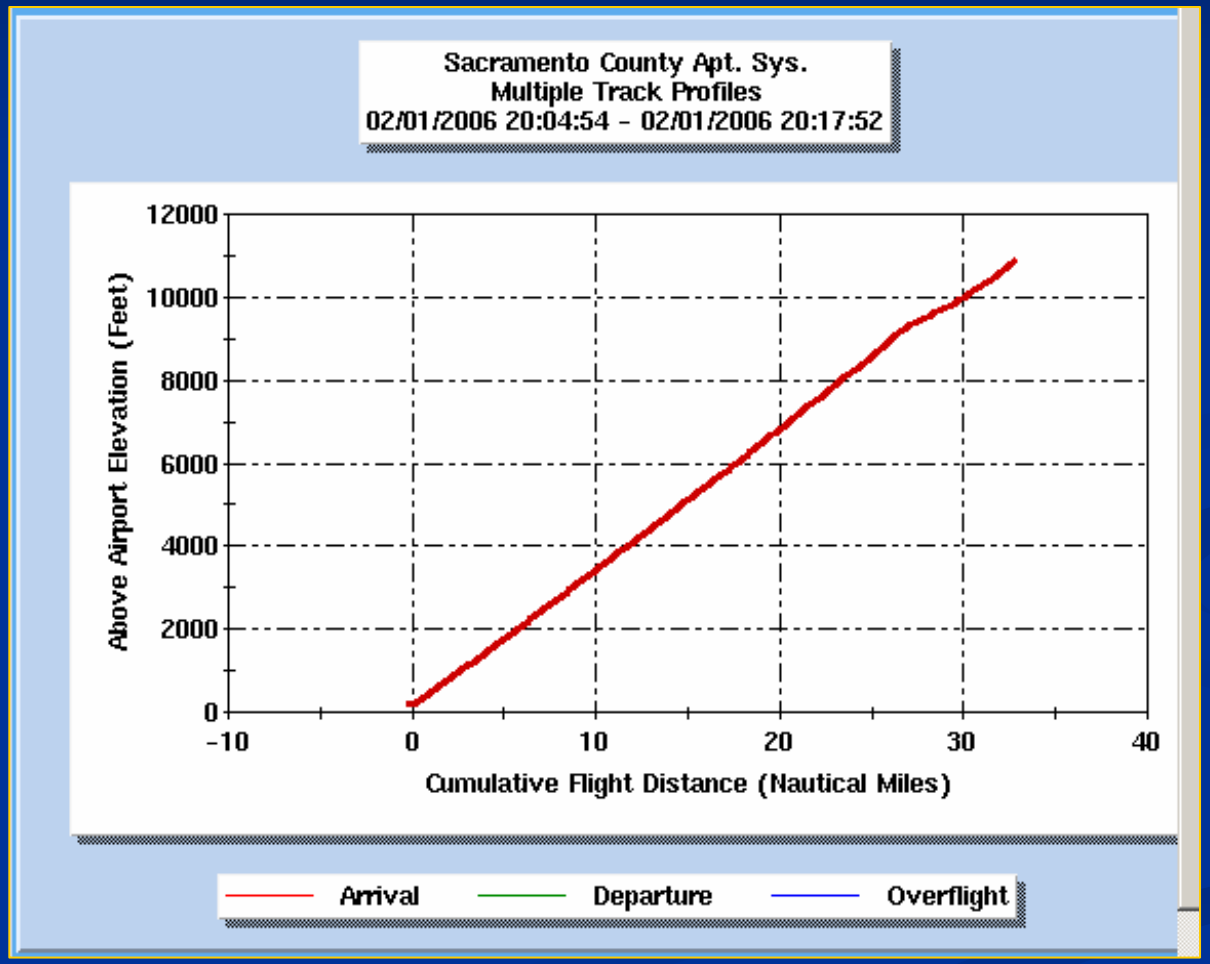
Actions for B 757 crews

Flaps 1
Bug Vref + 60 kts
Arm LOC

*± 10 kts

DRAFT

CDA Vertical Profile



CDA Noise Results*

Monitor	Average UPS	Average 1st CDA[1]	Average 2nd CDA[2]	Best CDA[3]	Score
1	58.8	53.2		50.0	5.6
2	62.3	58.1		53.8	4.2
3	65.0	60.5		58.3	4.5
4	65.7	74.1		57.0	-7.4

*dBA Lmax

[1]Trial period Feb – Mar 2005

[2]Trial period Feb – Mar 2006

[3]UPS 897, 15 Feb 2006

Summary

- Need for noise reduction
- CDA development
- CDA Benefits
  - Noise Reduction
  - Fuel Savings
  - Less Pollution
  - Stable Approach

Questions?