

**“EPA’s Mobile Source Observation Database”  
as presented to the MSTRS on 10/11/00 by  
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A Presentation on EPA's

**Mobile Source Observation Database**

for the FACA Mobile Source Technical Review Subcommittee

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**The Challenge**

- Develop “a database”
- Accommodate Historical Emission Factor Data
  - Stored by individual test program
  - In a somewhat common, but arcane fashion
  - Many differences allowed between programs

## **The Challenge (Continued)**

- Accommodate Variety of New Data
  - Engine Tests (in addition to Vehicle Tests)
  - Non-Road Vehicles
  - Second-by-Second Data
  - Experimental Tests
- More Systematic Data Validation and Input

## **The Solution**

- A Design Team
  - Primarily Vehicle Testing Experts
  - Consensus Decision Making
- A Relational Database
- Entity-Relationship (ER) Design Method
- Keeping it Simple

## The Solution (continued)

- Initial Implementation
  - ERwin Design Tool
  - FoxPro Data Base Management Software
- Use of Standard Table (.DBF) Formats for Data Submission from Contractors and for Data Entry

## The Top-Level Design Concept



## **Elaboration of the Design**

- Kinds of Mobile Sources
  - Vehicles
  - Engines
- Kinds of Observations (RESULTS)
  - Procurement
  - Repair
  - Tailpipe Emission Test
  - Evaporative Emission Test
  - Etc

## **Elaboration of Design (Continued)**

- Additional Entities
  - Test Programs which Produced the Data
  - Kinds of Fuel and Batches of Fuel
  - Test Schedules, e.g. Driving Schedules
- Additional Relationships
  - Multiple Procurements of Same Vehicle
  - Distinguish Tests Done Before - After Repairs
  - Identify Replicate Tests
  - Identify Groups of Results (e.g. for SFTP)

## **Advantages of This Approach**

- Facilitates Systematic Data Quality Checking and Entry
- Facilitates Combining Data from Multiple Test Programs for Analysis
- Low Cost
- Relatively Platform Independent
- Little Specialized Contractor Expertise Needed

## **What’s Currently in MSOD?**

- Data From 71 Test Programs
- Almost 32,000 Mobile Sources
  - 250 are Model Year 1995 or Later
  - Over 8000 Model Year 1990-1994
- 236,274 Observations or RESULTS

## **For More Information**

- URL <http://www.epa.gov/otaq/models.htm>
- Downloadable MSOD User Guide
  - In Adobe Acrobat (.PDF) Format
- Copy of MSOD Can Then be Requested
- Mitch Cumberworth
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