NAPA Training Tools
Importance of Training

• Expertise is being lost.
• Recruitment is critical.
• Time for OTJ training greatly reduced.
• Fewer opportunities for travel to training.
• Quality requirements greater.
NAPA Strategy

• Trade Show Opportunities
  – World of Asphalt
  – ConExpo-ConAgg

• Training Tools
  – Toolbox Talks
  – On-line Training

• Self-Directed Computerized
  – NAPA Guide to HMA Pavements
  – Virtual Superpave Lab

• Publications
NAPA
Toolbox Talks
Toolbox Talks

Truck Exchange

Truck Exchange

Truck Exchange

1. Truck handling live power is still the most common trigger
2. Efficiency of quality depends on good truck exchange
3. Successful coordination between the power operator, truck
   operator, and tank ahead.
Rolling Procedures

For Quality, Consistency & Productivity
Truck Exchange
MTV Exchange
Longitudinal Joint Construction

Building a Sound Longitudinal Joint
Forces of Compaction
Forces of Compaction

- Static Manipulation
- Impact
- Vibration

Lower Forces

Higher Forces
Pneumatic Static Pressure

Heavy Ballast or High Tire Pressure

Light Ballast or Low Tire Pressure

High Forces

Low Forces
Self-Directed Learning
Virtual Superpave Laboratory

Introduction
Aggregate Tests
Asphalt Binder Tests
Hot Mix Asphalt (HMA) Tests
Superpave Mix Design

Corporate Sponsors

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INTRODUCTION

1. General VSL Information
   - Introduction to the VSL
   - Site Index

2. General Pavement Information
   - The Equivalent Single Axle Load
   - Pavement Distress Types
   - HMA Mixture Types

3. Superpave Information
   - What is Superpave?
   - Recycled Materials in Superpave
THEORETICAL MAXIMUM SPECIFIC GRAVITY

Test Description

The following description is a brief summary of the test. It is not a complete procedure and should not be used to perform the test. The complete test procedure can be found in:

- AASHTO T 209 and ASTM D 2041: Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

SUMMARY

A loose sample of either laboratory or plant produced HMA is weighed while dry (to determine its dry mass) and then a short procedure is used to determine the sample’s volume. The theoretical maximum specific gravity is then the sample’s mass divided by its volume. Figure 4 shows major test equipment.

APPROXIMATE TEST TIME

45 minutes per test after samples are prepared (2 samples per test typically).

BASIC PROCEDURE

Test samples may be representative of a mixture prepared in the laboratory or in a HMA plant. The mixture should be loose and
Main Menu (List of Modules)

1. **Welcome & Introduction.** General document premise and pavement introduction/history.

2. **Materials.** Basic explanation of pavement materials - aggregate and asphalt - and their associated tests.

3. **Design Parameters.** Discussion of HMA pavement design inputs beyond material characteristics. Concentrates on subgrade characteristics, loads (traffic) and the environment.

4. **Mix Types.** Overview of the different types of HMA available and guidance on when each might be appropriate. Also includes a section on HMA recycling.

5. **Mix Design.** Basic explanation of the principal methods of HMA mix design. Includes the Hveem, Marshall and Superpave methods.

6. **Structural Design.** Overview of basic structural design approaches including both empirical and mechanistic-empirical methods.

7. **Construction.** Discussion of HMA pavement construction including production, transport, laydown, compaction, surface preparation, quality assurance and specifications.

8. **Pavement Evaluation.** Survey of the basic methods of pavement evaluation, why they are used and the most common measurements used. Includes a picture catalog of HMA pavement distress.

9. **Maintenance & Rehabilitation.** Overview of current rehabilitation and maintenance methods with a focus on overlay design.
Typical Milling Machine

Directions:
Roll the mouse over any part listed in the grey box at right to see its location in the milling machine.

Tracks
Vacuum
Cutter Drum
Conveyor Belts

Typically discharged to a dump truck

Direction of Travel

Depth of Cut

Existing Pavement

Figure 7.7: Milling Machine Components
On-line Training
Components of Compaction
Impact Compaction

- Force created by the striking of the roller drum or tire against the HMA mat surface
Publications
Conclusion

• Visit www.hotmix.org for more information on:
  – publications
  – on-line training
  – self-directed learning
  – toolbox talks
  – training venues

• Flyers available on vendor table.