

Topics

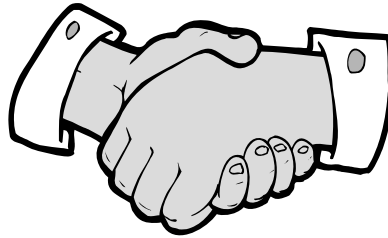
- Understanding the QC/QA concept
- Understanding purposes of ART course
- List and discuss responsibilities of ART
- Project Organization and Communication
- Basic Inspection Principles
- Ask questions and make comments!

QC/QA for Asphalt Pavement Acceptance

South Carolina Department of
Transportation
Asphalt Concrete Certification
Program

Quality Control/Quality Assurance Program

- **Testing responsibility**
 - Shifting from agency to contractor
 - Certification training programs
- **Partnering approach**



QC/QA

- **Traditional QC/QA in hot mix production**
 - Owner designs project and sets specifications (sometimes identifies material sources)
 - contractor can sometimes select material sources
 - Aggregate pit (s)/quarry
 - Asphalt binder supplier
 - Contractor supplies representative material samples to agency
 - Agency conducts mix design
 - Job Mix Formula (JMF) is given to Contractor

QC/QA

- **Traditional procedures in hot mix production**
 - Contractor produces aggregates and begins production of mixture
 - Agency conducts gradation, asphalt content tests at plant
 - Plant adjustments
 - Agency checks pavement density
 - Pay adjustments, if any, are made by agency



Quality Control/Quality Assurance (QC/QA)

“QC” - A system to ensure the production of uniform materials that meet required specifications through periodic inspection. Producer’s (Contractor) responsibility

Quality Control/Quality Assurance (QC/QA)

“QA” (Verification) - The process through which the test results of the QC process are verified. Random sampling at greater intervals than the QC process. Buyer’s (SCDOT) responsibility.

QC/QA

- **Quality pavements don’t begin and end with material inspection**
 - Pavement design (thickness, mix type)
 - Mixture design (materials selection, binder %)
 - Subgrade preparation
 - Base construction
 - Asphalt concrete production, placement, compaction
 - acceptance and payment

QC/QA

- **Statistical QC/QA Program**
 - production of more consistent, higher quality HMA
 - requires qualified technicians working for both the Contractor and the highway agency
 - all HMA technicians need to be properly trained in specifications, test procedures and industry standards

QC/QA

- **Objectives**
 - assure the proper qualifications and knowledge of all technicians working on a project
 - encourage cooperation between SCDOT and industry
 - improve quality
 - overall cost savings
 - longer lasting asphalt pavements

Asphalt Roadway Technician Course

- Intent of ART course
 - Why are we here?
- Topics of ART course
 - What will we discuss?

Asphalt Roadway Technician Course

Intent

- **Ensure technicians that are competent in proper test procedures**
- **ensure technicians that are competent in required everyday tasks**

Asphalt Roadway Technician Course

Topics

- **SCDOT Specifications**
- **Use of Nuclear Gauge**
- **Control Strips**
- **Random Sampling and Compaction**
- **Troubleshooting - Roadway Problems**

Asphalt Roadway Technician Course

Topics

- **Effects of Mix Design and Plant on Performance of Mix on the Road**
- **Segregation**
- **Calculations and Troubleshooting**
 - **Tack and tack application rates**
 - **Asphalt mix and mix application rates**
- **Pavement Evaluations**

Asphalt Roadway Technician Course

Topics

- **Responsibilities of Roadway Technicians**
- **Safety Concerns**
- **Asphalt Paving Equipment**
- **Asphalt Pavement Construction**
- **Materials: Binders, Aggregate, Tack Coat**

Asphalt Roadway Technicians

- **Responsibilities**
 - Establish and monitor roller patterns
 - Monitor ambient air temperatures
 - Monitor mat temperature
 - Calculate tack rate and dilution rate
 - Calculate laydown rate
 - Monitor compaction with nuclear gauge
 - Observe materials and workmanship
 - Make sure that good practices are being used

Project Organization and Communication

- Overview
 - Importance of Communication
 - Project Documents
 - Project Records
 - Pre-Construction Conference
 - Pre-Paving Conference
 - Ongoing Communication
 - Safety

Project Organization and Communication

- Importance of Communication
 - the most important part of planning and organization
 - Pre-con initiates verbal communication
 - Quality construction relies on communication
 - Communication provides safer projects

Project Organization and Communication

- Improving Communication
 - Avoid “adversarial attitude”
 - Speak clearly
 - keep it simple and to the point
 - Listen carefully
 - words, facial expressions, body language
 - Summarize conversation
 - Makes notes
 - for future reference

Project Organization and Communication

- Project Documents
 - There shouldn’t be any confusion about which documents are being used
 - Sometimes, they can be in conflict
 - Hierarchy for solving discrepancies
 - Special Provisions
 - Plans
 - Supplemental Specifications
 - Standard Specifications

Project Organization and Communication

- Pre-Construction Conference
 - Agency Input
 - Outline work, unusual aspects
 - Contractor Input
 - Construction schedule
 - Project Personnel
 - key people for all parties, main contact person
 - Testing Requirements, Responsibilities
 - Safety

Project Organization and Communication

- Pre-Paving Conference
 - Key personnel
 - Contractor input
 - Agency input
 - Discussion
 - Meeting minutes
 - Action items

Project Organization and Communication

- Ongoing Communications
 - Weekly Updates
 - Major Events

Project Organization and Communication

- Safety
 - Most important aspect of project
 - Communicate that this is everyone's responsibility
 - safety of agency and contractor personnel
 - (traffic and equipment)
 - safety of traveling public
 - proper traffic control



Project Organization and Communication

The Construction Team

***Goal: Agency and Contractor Personnel
working together to get the desired result of
a successful, quality pavement for the
traveling public***



Asphalt Roadway Technician

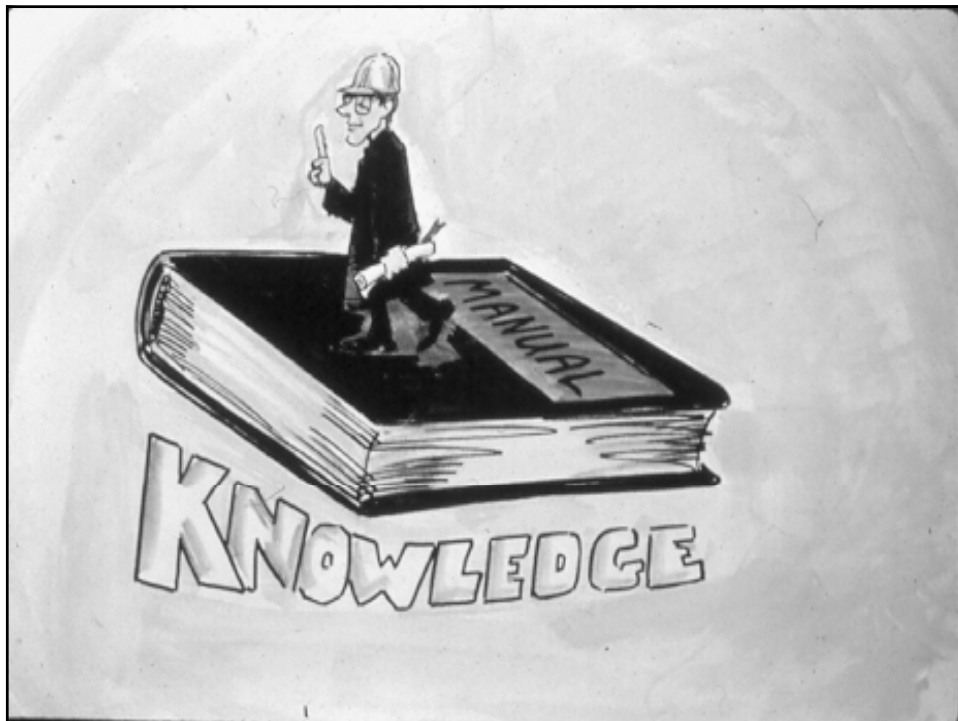
Principles

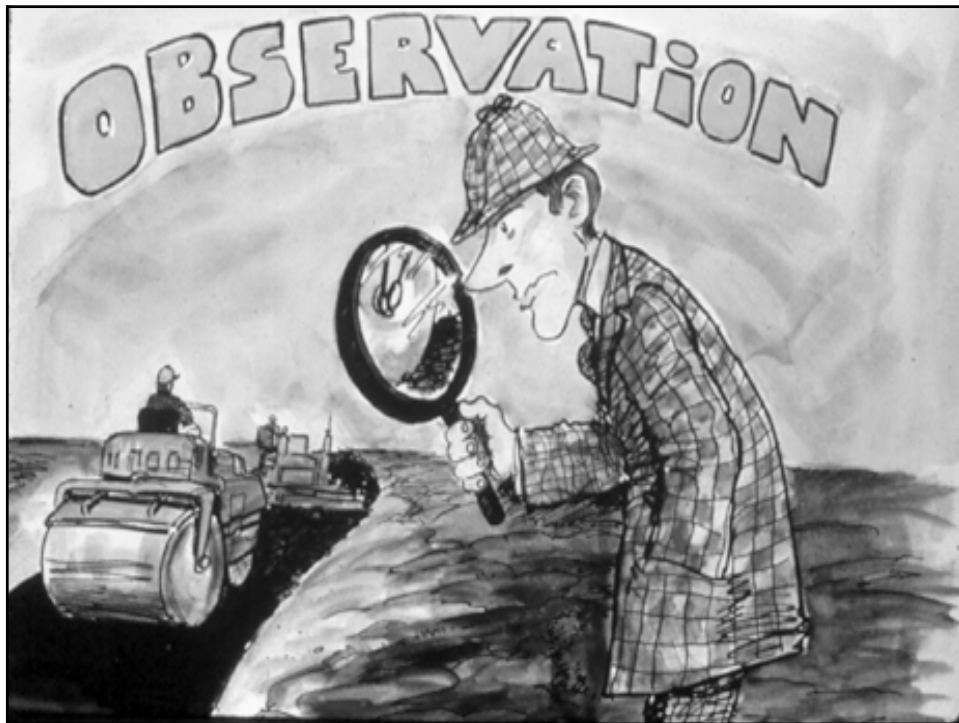
Principles of a good HMA Roadway Technician

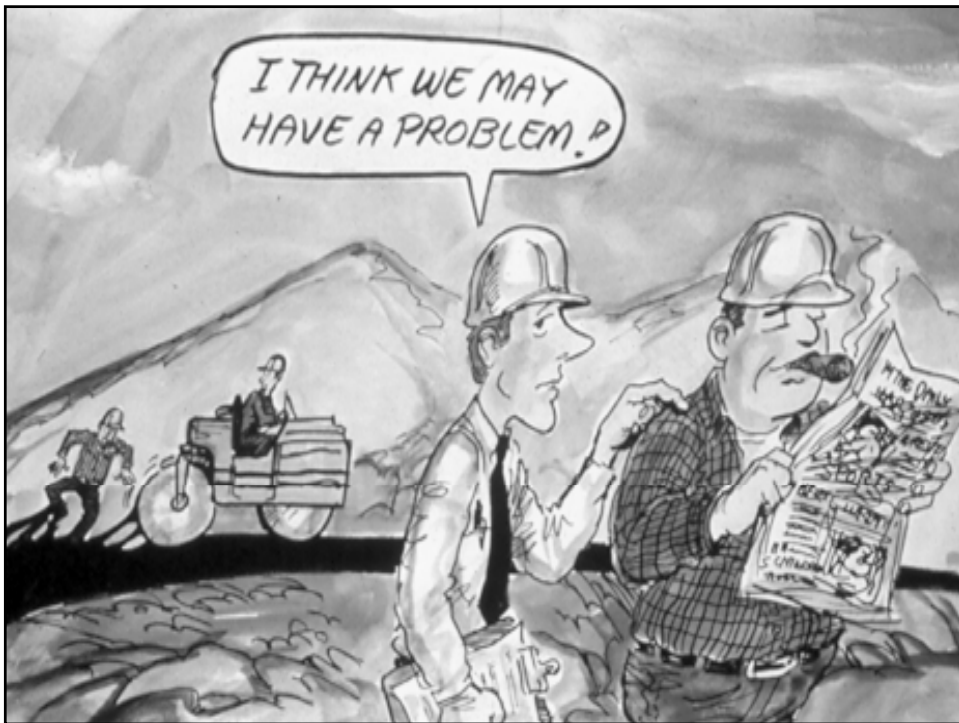
- Knowledge
- Common Sense
- Observation
- Communication
- Taking Charge

Poor Pavement Performance Reasons

- Improperly trained employees (agency and contractors)
- Lack of knowledge of specification requirements
- Improper evaluation of construction equipment and materials
- Mix produced is not same as job mix formula
- Failure to recognize limits of testing agency
- Failure to provide proper drainage
- Inadequate compaction
- Desire for quantity rather than quality







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