

US Army Corps of Engineers' Perspective on Planning and Design for the Future

**Mr. John F. Rushing
U.S. Army Engineer Research and
Development Center**



2008 Road Dust Management Practices and Future
Needs Conference, San Antonio, Texas

Outline

- **Background**
- **Recent Research**
 - **Helicopter Landing Pads**
 - **Unpaved Convoy Routes**
- **Knowledge Gaps**
- **Future Needs**



Problem

***“Brownout” Conditions During Rotary
Wing Aircraft Landings***



Problem

Reduced Visibility During Convoy Traffic



Current Guidance

- **UFC 3-260-17**
- **Last updated in 1987**
- **Limited Market Representation**

UFC 3-260-17
16 January 2004

UNIFIED FACILITIES CRITERIA (UFC)

DUST CONTROL FOR ROADS, AIRFIELDS, AND ADJACENT AREAS



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Recent Research

- **Field and Laboratory Testing Sponsored by the US Marine Corps Systems Command**
- **Goal of Identifying Products and Procedures for Reducing Dust Hazards in Iraq/Afghanistan**
- **Included Both Ground and Air Vehicles**



Field Testing

Evaluate performance in simulated conditions



Field Testing

- **Objective** – to provide quantifiable product assessment under expected usage conditions
 - Traffic
 - Soil
 - Climate
- **Evaluation Methods**
 - Dust particle collection
 - Visual Inspections
 - Soil property measurements

Rotary Wing Aircraft Testing at Yuma, AZ

➤ Conditions

- Live Flight Testing
- Sandy soil
- Hot, dry climate



Product Evaluation

AH-1



CH-46



CH-53



UH-1



Unpaved road treatment in Douglas, AZ

➤ Conditions

- Lightweight truck traffic
- Clayey gravel soil
- Hot, dry climate



Relative Product Effectiveness



Unpaved Road Treatment at Ft. Leonard Wood, MO

➤ Conditions

- Heavy truck traffic
- Clayey gravel soil
- Temperate climate

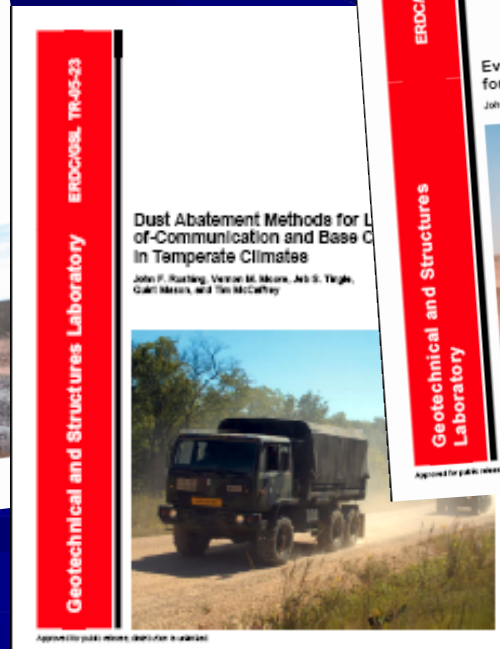
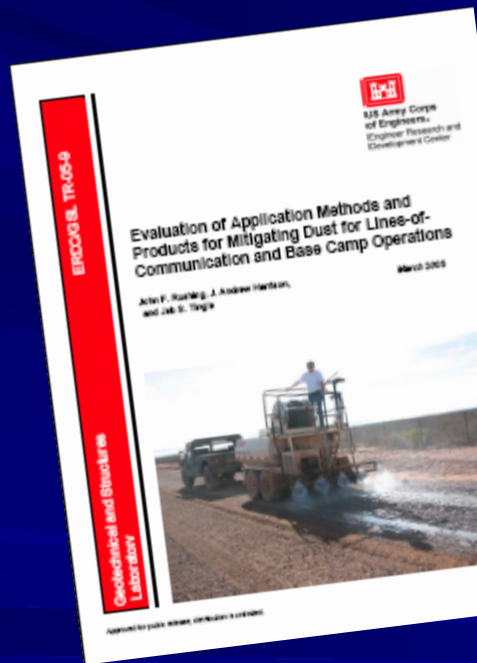


Long-Term Performance Evaluation

- Twenty Five Test Items
- Periodic site evaluations
- Quantitative performance comparisons



Data Analysis and Documentation



Training and Evaluation

➤ Limited User Evaluation

- Revise protocol based on user feedback
- Formalize training program



Technology Transfer

➤ Field Handbook

- Complete application procedures for each treatment condition
- Equipment transportation and maintenance procedures
- Product descriptions and procurement information

➤ **Web Site:** <https://transportation.wes.army.mil/triservice>



Knowledge Gaps

- **Dust Control in Non-Traffic Areas**
- **Impact of Dust on Air Quality**
- **Environmental Impacts of Dust Suppressants (limited study performed)**
- **Erosion Control Capabilities of Dust Suppressants**

Future Needs

- **Update UFC Criteria**
- **Create Qualified Product List for Defense Logistics Agency Procurement**
- **Define Quality Assurance Procedures For Testing Large Procurement Volumes**
- **Develop Protocol for Maintaining Air Quality Compliance on Military Installations**
- **Develop National Protocol for Environmental Acceptance for Dust Suppressants**
- **Develop Standardized Method for Assessing Product Effectiveness**
- **Form a Trade Association to Promote Dust Mitigation Technologies**

Questions?