Weather Training for Emergency Managers: A Perspective from the EM Community

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EM Weather Decision Making

Social and Behavioral Influences

Decisions

- Fire
- Police
- Medical
- Transportation
- Agriculture
- Public Works
- Logistics
- HazMat
- Communication
- Mass Care
- Public Info
EM Weather Decision Making

Understanding

Decisions

Emergency Management

Hazards  Impacts  Risk  Messaging

Public Works  Police  Transportation  Medical
Agriculture  Fire  Communication  Mass Care
Logistics  HazMat  Public Information
EM Weather Decision Making

Understanding >> Confidence >> Decisions

- Emergency Management
- National Weather Service

- Fire
- Police
- Medical
- Transportation
- Agriculture
- Public Works
- HazMat
- Mass Care
- Communication
- Public Info
EM Weather Decision Making

- Competence

- Comfort (trust)

- Understanding

- Confidence

- Decisions
EM Weather Decision Making

Beliefs/Values
Experience
Training

Competence
Comfort (trust)

Understanding Confidence
Decisions

Emergency Management

Public Works
Fire
Agriculture
Police
Transportation
Medical
Logistics
Communication
HazMat
Mass Care
Public Info
Background

• Characterized by larger project context
• When information is presented, it may not be “understood,” for example:
  • Information cannot be found
  • Information is not clear
  • Information is not relevant for needs of EMs
  • Information is not trusted

• Several pathways towards clarity, relevance, and trust...
  • Change the information presented.
  • Change EMs’ ability to assimilate and synthesize through training.
The weather enterprise focuses on meteorology. From the EM point of view, what “weather” training is needed?
Methods

• Design:
  • Uncover mismatch between current trainings’ purpose and content, and the EMs’ decision-making needs.

• Surveys:
  • Approx. 700 emergency managers from across U.S.
  • 2 surveys on training
  • Data available upon completion of project.
Current Training

• 50% of EMs are formally trained in weather

• 80% of EMs rate training “very” or “extremely” important compared to other training.

• Common trainings:
  • NWS Spotter Training, Skywarn, FEMA ("Hazardous Weather")
  • Meteorology-focused rather than emergency management-focused
Key Issues

• 3 key issues to address in training....

- Relevance
- EMs as Information Brokers
- Training as Relationship Building
Relevance

EMS cannot and do not want to be meteorologists.

Six *critical* elements:
  • What
  • Where
  • When
  • How long
  • Current conditions
  • How sure are you?

• And how/where to find this info (products)
Relevance

- EMs want information driven by operations.

- When asked how to increase their understanding...
  - 23% - more meteorology
  - 72% - assessing the impact of weather events
  - 77% - using weather info for decisions
  - 77% - making decisions when weather info is uncertain

- Over- and under-confidence
  - The “Goldilocks Problem”
EMs: Information Brokers
EMs: Information Brokers

EM
- Receives weather information

Utilities
- Precipitation
- Wind conditions

Fire
- Flooding
- Lightning strikes
Trust and Comfort

Relevant content

Training

Competence

Comfort (trust)

Understanding
Confidence
Decisions

Reciprocal relationships
Trust and Comfort

Seminars & Classroom Training:
- “Allows for asking questions”
- “Good group environment”
- “Engage in active discussion”
- “Interaction with participants extremely valuable”

... but
- “Difficult to schedule”
- “Too much information”

Online Training:
- “Work at own pace on own schedule”
- “[Good] for simple concepts or review”

... but
- “No interaction”
- “Lack of participation with instructor and colleagues”

Training is about content and relationships.
Trust and Comfort

EMs have challenged the weather enterprise: the relationship must go **both** ways.

- 80% say trainers *must* know EMs’ jobs
- 45% say forecasters should take EM training
Summary

Training must shift from *assumptions* to *needs*.

• Training must consider...
  
  *Relevance* – to operations and decisions
  *Position* – EMs as an information hub
  *Relationship* – Training means content **and** comfort
Recommendations

**Relevance** – focus on application, not meteorology
  - Train EMs to identify and utilize six critical elements
  - Make sure you know the job!

**Position** – “train the trainer”
  - EMS as ‘briefers’

**Trust and comfort** – facilitate relationship building
  - Provide ways to interact with weather enterprise and other EMs.