Missouri National Guard
Consequence Management

Capabilities, Challenges and Opportunities

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The Adjutant General

This briefing is unclassified
* Materiel Developer Includes Program Executive Officers (PEOs); Program, Project, Product Managers (PMs); and the U.S. Army Materiel Command (AMC). The Army’s primary Combat Developer is U.S. Army Training and Doctrine Command (TRADOC). TRADOC Battle Labs, Intergrated Concept Teams (ICTs), and Integrated Product Teams (IPTs) support the MATDEV/CTBDEV Team.
Materiel Requirements Generation / Approval / Program Initiation Processes Summary

TRADOC Futures Center Forwards

Schools / Centers ICTs generate and document materiel requirements by potential ACAT

SEP / M&S / Other

All "Sponsor" approved, prioritized MCDs *

G-37 Future Warfighting Capabilities Division (DAMO-CIC)

AROC

Starting Goal: 6 - 9 weeks

CSA Approval

ASA(AL&T) (Program Initiation)

USD(AT&L) / ASD(NII) (Program Initiation)

G8 Force Development (DAPR-FD)

J8 Gatekeeper KM / DS Review

FCB / JCB / JROC Review

INDEPENDENT

JOINT INTEGRATION

JROC INTEREST

ACAT I / II

ACAT I & AIS

* G-37 DAMO-CIC enters ALL MCDs into J-8 JCIDS (KM / DS database) process for Joint Potential Designator (JPD) assignment and assessment prior to hand-off to G-8 Force Development Directorate for final validation / approval / programming
Agenda

• Response Spectrum

• Current Applications of S & T Response Tools
  – CST
  – CERFP
  – JISCC

• Challenges
  – Command and Control
  – Hazard Specific

• Opportunities
Response Spectrum – Where Consequence Management Begins

High

Specialized Federal Assets (LD/HD)

Federal Civilian

Private Sector

National Guard

Required Capabilities and Resources

Low

Pre-Event

First 12 Hours

12-24 Hours

24-48 Hours

48-96 Hours

30 Days

Incident

Immediate Response

Reinforcing Response

SA & Joint C2 throughout Tiered Response

JOC

JTF-State

NGB JOC

JFHQ-State

WMD-CST

NGCERFP

NGRFF

Traditional Forces

Specialized Federal Assets (LD/HD)

Local Emergency Services Mutual Aid Agreements & Interstate Compacts
CSTs & CERFPs

- CSTs detect and identify CBRNE agents/substances, assess the effects and advise the local authorities on managing the effects of the attack and assist with request for other forces (i.e. CERFP).

- CERFPs locate and extract victims from a contaminated environment, perform medical triage and treatment, and perform mass patient/casualty decontamination.

The NG CERFP and CSTs provide a phased capability and mutual support.
“To provide military unique capabilities, expertise and technologies to assist State Governors (to) prepare for and respond to CBRNE incidents. Team must complement and enhance (not duplicate) State CBRNE response capabilities. “

DoD Program Review, Sep 01
MISSION: Support civil authorities at a domestic CBRNE incident site by identifying CBRNE agents/substances, assessing current and projected consequences, advising on response measures, and assisting with appropriate requests for state support.

(Analytic, advisory, civil-military interface and communications functions)

KEY CHARACTERISTICS:

• Must be certified by Secretary of Defense
• Unique to National Guard
• Main role is support to Governor and IC
• Sophisticated Reachback System
• Interoperable with Civil Responders
Computer Modeling

- Use a variety of computer modeling programs to help predict the dispersion of substances over an area.
- Receive historical and predictive weather from various on-line and real-time weather sources.
- Assists in the determination of sheltering, street closure, decontamination and recovery areas.
Analytical Laboratory System (ALS)

- Two Class III Containment Glove Boxes
- Hapsite GC/MS
- Fluorescent Microscope
- Fourier Transform Infrared Spectrometry
- Immunoassay Tickets
- Polymerase Chain Reaction
- Refrigerator
- Generator and Converter
- Digital transmission link to UCS
Analytical Laboratory System (ALS)

- Class III Bio Safety Cabinet (Glovebox) for Sample Characterization and Preparation
- Diesel Generator provides self-sustained power for 30+ hours before refuel

Provides the CST Commanders with capabilities to:
- Identify unknown CBRNE hazards on-site,
- Send presumptive results back to reachback labs for confirmation, and
- Advise incident command on presumptive analysis

Real Time – Polymerase Chain Reaction
- ID of Selected Bio warfare Agents Through Matching of DNA Segments
- Multiple Targets of ~25 Base Pairs on Chromosomal and Plasmid DNA
- Fluorescence Resonance Energy Transfer
- DNA Extraction in Glovebox

Gas Chromatograph/Mass Spectrometer
- ID of Volatile Organic Chemical Warfare Agents and TICs/TMDs
- Deconvolution of Mass Spectra
- Advanced Malath Mass Spectral Analysis
- Fast Co-Incubation Peaks and Filterable Components

WMD-CST
OV-1 High-Level Operational View Concept

Fourier Transform Infrared (FTIR)
- ID of Chemical Warfare Agents and TICs/TMDs
- Liquids and Solids
- Advanced Signature of Infrared in Covalent Bands
- Coupled with Raman Spectroscopy for ID of all Chemicals
- Advanced Manual Interpretation of Spectra for Comprehensive Analysis of Compounds and Complex Carbonyls

Polarized Light Microscope
- ID of Solid Particulate Chemical and Biological Materials
- ID of “White Powders”
- Particle Characteristics in Polarized Light Path
- Fluorescent Characteristics
- McCrone Particle Atlas

A. Particle mixture detected
B. “Crossed polars” indicates starch
C. Size, shape, and color indicates biological spore particle 2
Unified Command Suite (UCS)

Radios
HF/UHF/VHF
SATCOM
INMARSAT
Phones
DSN/Commercial
Data
NIPRNET
SIPRNET
Video
Collaborative Video
Conferencing Tools
Interoperability
ACU-1000
Provides the CST Commanders with capabilities to:
• Assist incident command with interoperable communications
• Advise on incident response Common Operating Picture, and
• Assist incident command with access to DoD, State, and Federal reachback support.

Capabilities
• Radios: LMR, Military UHF/VHF, Tactical SATCOM, INMARSAT, Phones (DSN and Commercial)
• Data: NIPRNET and SIPRNET
• Video: Collaborative Video and Tele-Conferencing
• Radio interoperability through Raytheon ACU1000
• Air Transportable by C-130, C-141, C-5, C-17
• 15 kW Diesel Generator, dual ECU System, and dual operator console
Advanced Liaison (ADVON)

Provides the CST Commanders with capabilities to:
• Assist incident command enroute to incident location,
• Coordinate with reachback resources on the move,
• Provide internet, phone, interoperable communications in minutes.

Enroute Capabilities
INMARSAT
• ISDN transmission rates up to 64kbps
• Communications maintained up to 68 mph
• STU-III, STE, and KIV 7HS compatible

Integrated Radios / Satellite Telephone
• VHF/UHF, 800 MHz communications
• External speakers and microphone
• Global coverage, vehicle mounted antenna

HAZARD Modeling Capability
• CBRNE plume modeling, mapping capability
• Integration with reachback modeling

On-Scene Capabilities
Internet/Network Access
• Auto-deploy very small aperture terminal (VSAT) broadband access in minutes
• Voice over Internet protocol (VoIP)
• Wireless network, computers, and all-in-one printer

Incident Command Radio Interface (ICRI)
• Provides interoperable communications between radio/telephone/different frequency systems
Reachback includes Secure & Non-Secure Voice, Video, and Data Connectivity to:

- Local Responders
- Incident Commander
- National Guard Elements
- DTRA and other supporting technical assets

Through the chain of command to:

- Regional Task Forces
- DCCO/DCE
- JTF-CS
- CBIRF
- NORTHCOM
- JDOMS
CBRNE Enhanced Response Force Package (NG CERFP)

**MISSION:** On order: Responds to chemical, biological, radiological, nuclear, or high yield explosive (CBRNE) incident and assists local, state, and federal agencies in conducting consequence management by providing capabilities to conduct patient decontamination, emergency medical services, and casualty search and extraction.

*(Casualty Search and Extraction, Mass Casualty Decontamination, and Emergency Medical Treatment)*

**KEY CHARACTERISTICS:**
- Comprised of NG MTOE units
- Unique to National Guard
- Specialized Training and Equipment meets NFPA certification and NIOSH / OSHA standards
- ARNORTH validated capabilities
- Interoperable with Civil Responders
- At least one CERFP per FEMA Region
Search and Extraction Element

MTOE Engineer Company(-); 50 personnel

- Receive NFPA certified training to operate in confined space collapsed structure
- Specialized equipment meets NIOSH/OSHA standards
- Trained to operate within the National Incident Management System

Listening Device

Extraction Tool Kit

Thermal Imaging Camera
Skeds: minor injury - minimum distances
Wheeled litters – reduces effort over longer evac distances
Mobile: evac for the seriously injury
Mass Casualty Decontamination Element

MTOE Chemical Company(-); 75 personnel

--Force sizing and special equipment designed to support a throughput of 75 non-ambulatory and 225 ambulatory per hour
--Establish CBRNE response decontamination site
Medical Element

Air National Guard Medical Group(-); 45 Personnel

--Provide medical triage & stabilization and treat CBRNE casualties
--Supports a throughput of 75 non-ambulatory and 225 ambulatory per hour
--Ten medical personnel participate in confined space collapsed structure operations
JISCC provides cross banding systems for interoperability with up to 18 Organizational radio nets to include first responders:

- Ku-band SATCOM reach back
- INMARSAT backup
- VHF/UHF/800MHz radios
- Voice / DSN / Internet / NIPR
- VTC
- Secure wireless LAN
- Support up to 250 LMR Radios (20 Provided)
- SIPR over NIPR design (future)
- STE interface (future)
Challenges

• Command and Control
  – Situational Awareness
  – Interoperable Communications
  – True interagency Information Sharing and Access

• Other Response Challenges
Command and Control Challenges

• Common Operating Picture – Is it really Common?
  – How can we get info to/from other agencies?
  – Integrated Components for Multi Agency Dashboard
  – Blue Force Tracker equivalents for Domestic Opns

• Incident Awareness Assurance (operationally known as Intelligence, Surveillance and Reconnaissance (ISR)) Before, During, and After Incident
  – Google Earth the answer?
  – Real time information?
  – Wide Area Surveillance Capability?
  – National Asset Availability?

• How do we allow access/conversely deny access to planning information? i.e. DOD Security Systems
Other Response Challenges

- Water Availability and Distribution
  - Bottling systems?
  - LifeStraw®?

- Hazard Specific Challenges
  - Flood Barrier improvements
  - Breached Levee Response Tools
  - Rapid Damage Assessment
    - Bridges
    - Roads
    - Runways
Opportunities

• Each Challenge brings its own opportunities

• We must collaborate to resolve the fundamental requirement for all Domestic Emergencies
  – Application of Federal, State, and County/Community resources and support at the right time and place to save lives and protect our citizens from unnecessary human suffering

• Enable interagency and corporate synergy to develop and act

• Concept mining is a must
Questions?