CAW use of M&S in Support of Maritime HLD/HLS/ATFP Test and Training Exercises

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OUTLINE

• CAW Background
• Asymmetric Warfare Integration Ctr. (AWIC)
• Why use M&S?
• Types of M&S used by CAW
• Summary and conclusions
A Gathering Storm?

“We can be certain about trends, but uncertain about events. Adapting to surprise quickly and decisively must therefore be a condition of planning. 

Donald Rumsfeld
Mission

• A US Navy agency established in 1999, dedicated to supporting US military forces and local/state/federal organizations in recognizing, countering and controlling the effects of Asymmetric Warfare in support of the Global War on Terrorism

• Develop and execute complex scenario-based Exercises involving multiple diverse organizations; expanding on Maritime/Port Security environment heritage
  – Testing
  – Training
  – Experimentation
Products and Services

Training & Exercises

Mission Management & Rehearsal

Technology Assessment & Analysis

Tactics & Procedures Development

Integrated AW Environment
- Simulation Development
- Exercise/Research Support
- Scenario Dev & Documentation
- Terrain and Org Data Development
- Real/Virtual targets/threats
- White Cell
- Red Cell (OPFOR)
- Intel Cell
- METOC Cell
- Metrics
Technology Insertion

- Warfighter
- Higher Command
- Needs
- Technical Community
- Technology
- Tactics
- Techniques
- Procedures
- Solutions
- Exercise
- Live or Simulated
Asymmetric Warfare Integrated Center (AWIC) Integration

- DOD
- Academia
- War Fighter
- INTEL Community
- Industry
- DRENIDNET
- SIPRNET
- GCCS-M
- JWICS
- Civil Sector
- Private Sector
- CAW Exercise Control Center
- Tools
  - METOC
  - GioVIZ, Keyhole
  - E-TEAM/NC4
  - DIMAS
  - JCATS
  - VTC

RDT&E, Training, Systems Integration, Joint Operations
Asymmetric Warfare Integration Center (AWIC) Capabilities

- Capable of distributing and recording data (Integrated, Net-centric)
- Live and simulated data feed
- Multi-Level classified/unclassified data
- Provide access to various facilities/agencies
- Links to mobile data collection capabilities
  - Sensors from the CAW floating vessel or van
- Utilized as an Exercise Control Center (ECC)
- Utilized as a training and communication center
Why CAW Uses M&S?

Two aspects of the interoperability exercise lend themselves to simulation: response activities by the participating agencies and Red operations (or natural events).

M&S is used in our events where:

• Impact of live play would be prohibitive
  – Obstruction of/Destruction to infrastructure, Health hazards

• There are insufficient resources

• There is insufficient time

• A variety of scenarios and their impacts can be demonstrated
  – In an exercise or In a Table Top discussion
Simulation Characteristics/Benefits

• High Level Scripting
  – Loosely scripted actions provide ground truth representation that can also be recorded/played back
  – Calculated response to commanded activities
  – Easily controlled ad hoc injects
  – Detailed element and terrain data required

• Scenario development and run time costs are minor therefore it reduces exercise and training costs.
• Scenario plays out logically, with unrestricted interactive play.
• Terrain and entity data detail is readily available.
COTP analyzes and dispatches 3 vessels to respond to the situation (1 Live; 2 simulated).

Live responder executes in the field; Reports to EOC and Response Cell as appropriate.

Response Cell “drives” 2 USCG Responders in the JCATS model. Coord w/ECC. Reports generated to IMC and Live OPS as appropriate.
14 OCT
POT and Tacoma EOCs Stand up

15 OCT
POT Security

16 OCT
Marine ICE unit boards Rogue Ship

5 OCT
USCG Tracks Rogue Ship

BNSF RR Incident 1

POT and Tacoma EOCs Stand up

USCG Boards Rogue Ship

POT CBP, ICE, & JTTF investigation

ICE ID Containers/POT Bldg Evac/TPD SWAT ROE Change

STATE/WSDOT/DCE EOCs Stand-up

FBI SWAT (Start) HMRT/CST alerted

BNSF 2

POT Perimeter Breech

FBI SWAT (ENDEX) H/O To HMRT/NG CST

7 OCT
POT Perimeter Breech

Sultana Departs POT

HOPV Explosion

Container Ship Offloads “Hot” Containers

USCG MRO CASEVAC

SFD ICP establish Triage site, ground CASEVAC

USCG works MARSEC change coord w/ State RRTF/WSDOT to establish Port reopen plan

NOTE: Times are for planning purposes only

WSDOT/WSP coord to reopen I-5 & I-90

FED Response, DCO/DCE officially activated/ FCC alerted

WSDOT/WSP/FBI near overload request FED support thru State EOC

CRISIS CONSEQUENCE

LIVE PLAY

SIMULATION
CAW Modeling and Simulation

- **JCATS**: Joint Conflict and Tactical Simulation
- **GeoViz/Keyhole**: Geo-spatial representation/locator
- **Tier**: Simulation tool to provide situational awareness
- **RangeView**: M&S tool provides Common Operating Picture
- **Air Transport and Dispersion (Plume) Modeling**:  
  - **HPAC**: Hazardous Prediction and Assessment Capability (DTRA)  
  - **VLSTRACK**: Vapor, Liquid and Solid Tracking (USN)  
  - **CAMEO/ALOHA**: Areal Locations of Hazardous Atmospheres (NOAA & EPA)  
  - **CATS/JACE**: Consequences Assessment Tool Set, Joint Assessment of Catastrophic Events (DTRA, FEMA & NGIC)
Decision Parameters

- **Live play requirements:**
  - If all response play is live, computer sim advantage is minimal.
  - If live play is not essential, computer sim can reduce logistics and costs

- **Scope and complexity**
  - As scope increases, computer sim becomes more effective, especially if events are strongly linked.
  - Complex events are easily managed within computer sim

- **Preparation Costs**
  - Late changes easily accommodated in computer sim.
  - Consider computer sim support staff availability/cost & prep time.

- **Level of play**
  - Increase in level causes exponential increase in C2 and response elements

- **Participant availability**
  - Computer sim flexibility for filling in participant gaps.

- **Classified ops**
  - Performed w/ relative ease on a secured computer.
Summary

CAW is providing training, technology testing and evaluation, and the foundation for developing Tactics, Techniques, and Procedures (TTP) for controlling and neutralizing the effects of Asymmetric Warfare in complex scenario-based series of live/virtual/constructive exercises.

Use of simulation has improved capabilities and situational awareness at a reduced cost.
Conclusion

- Using sims in conjunction with live play or Table Top exercises can improve effectiveness and efficiency and reduce costs (depending on the participant’s interests)
- The live and sim techniques can be combined to make best use of attributes from each.
- Together, they can provide improved situational awareness for the participants.
Questions?

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