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Introduction to Battleboard Tabletop Exercises

National Nuclear Security Administration

U.S. DEPARTMENT OF ENERGY

Battleboard Tabletop Defined

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- A Battleboard tabletop is a turn-based (adversary then protective force) simulation designed to evaluate the system's capability in response to an attack by an adversary force
- A Battleboard is a three-dimensional scale model with as much detail as practical to ensure accuracy of the results
  - Terrain features
  - Moveable units (people and vehicles)
  - Vegetation
  - Buildings

Background

- Originally developed by the U.S. Army for theater-wide battle planning
- DOE adapted the methodology and modified the rules to reflect small unit tactics, engagements, and conflicts

Typical Uses of the Battleboard

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- Evaluation of a current system (Baseline)
- Evaluation of an upgraded or changed system
- Development of tactical plans
- Training of protection forces (national police, military, and/or other emergency responders)
- Evaluate procedural changes in the safeguards and security program
- Contingency planning

Overview of the Methodology

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- Concept is similar to combat-oriented board games
- Participants are divided into two groups
  - Adversaries
  - Protection forces (national police, military, and/or other emergency responders)
- The two groups are separated to create plans of attack and defense
- When planning is complete, the two groups meet around the Battleboard that represents the system to be evaluated
- Each team has 5 minutes to complete a turn

Overview of the Methodology (Continued)

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- Adversaries begin the “battle” with the first move (turn)
- Protective force has the second move
- Each move reflects a unit of time on a clock (typically 30 seconds)
  - One adversary move and the subsequent protective force move reflect one 30-second unit of time
  - This allows for more detailed analysis of critical events

Time

	30 Second Move	60 Second Move	90 Second Move	120 Second Move	180 Second Move	210 Second Move
Adversary						
Protective Force						

Overview of the Methodology (Continued)

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- The battle continues until one of the following conditions is met:
  - Adversaries have met their objective
  - Adversaries are no longer capable of meeting their objective. Typical reasons:
    - Attrition: Not enough people to complete remaining tasks
    - Loss of essential capability such as explosives, vehicle, or tools

Overview of the Methodology (Continued)

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- Both the adversary and protection forces (national police, military, and/or other emergency responders) are controlled to ensure they conduct realistic actions
- Protection forces (national police, military, and/or other emergency responders) are constrained by:
  - Actual procedures and training – No superhero actions!
  - Equipment in inventory (unless an upgrade is being modeled)
- Adversary forces are constrained by an agreed-upon design basis threat with:
  - Force numbers
  - Insiders numbers and level of aggression (passive/active)
  - Equipment (tool kit)
  - Realistic tactics and movements

Roles and Responsibilities

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- Senior Controller – person responsible for an accurate and unbiased outcome of the simulation
  - Ensures all parties act in accordance with the agreed-upon rules
  - Has final decision making authority when parties do not agree on an issue
- Adversary Controller – unbiased person responsible for ensuring that adversary team makes plans in accordance with agreed threat and capabilities
- Protective Force Controller – unbiased person responsible for ensuring that the protective force acts according to approved defense plans, training, and tactics

Roles and Responsibilities (Continued)

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- Adversary Team Lead – is the person who strives without personal compromise to achieve the adversary objective
- Protective Force Team Lead – person who strives without personal compromise to achieve MPC&A system success
- Team Members – assist in the development of plans, suggest tactical moves, and provide technical input in areas of expertise
- Recorder – person recording all movements and engagement outcomes

Engagements of Forces

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- Tokens represent people. Each token is uniquely identified for documentation and tracking purposes (i.e., PF 1 for Protective Force number 1)
- Adversary plans that include hidden traps, explosives, snipers, etc., must be announced to the controllers before the simulation begins
- A token may engage only one other token per turn
- A token firing from a hidden position becomes visible to those in line of sight and may be engaged in that same turn

Engagements of Forces (Continued)

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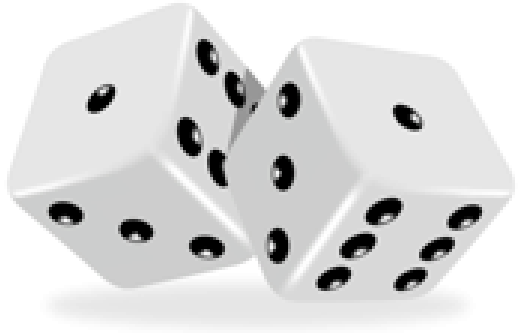
- Multiple tokens may engage a single token during the same turn
- Variation of success of firearm engagements is determined by the roll of two six-sided dice



- Possible outcomes of an engagement:
  - Miss
  - Wound
  - Kill
- Outcomes are determined by weapon tables based on:
  - Type of weapon
  - Observation capability
  - Distance from target

Modeling Armor

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Vehicles

- No protection against explosives or rocket-propelled grenades unless designed against those threats
- Armor piercing rounds' effectiveness based on type of armor deployed
- Firing small arms from a moving vehicle will not result in neutralization of tokens

Personnel

- No protection achieved with body armor
- Hardened fighting positions
- No protection against explosives or rocket-propelled grenades unless designed against those threats
- Armor piercing rounds' effectiveness based on type of armor deployed

Special Weapons and Equipment

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Bulk Explosives

Fragmentation Grenades

Distraction and Disorientation Devices

Rocket-Propelled Grenades

Movement of Tokens

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- Tokens may not shoot and move at the same time and achieve engagement success (suppression only)
- Tokens cannot travel full distance allowed and fire on another token
- Tokens may move ½ distance and engage a token in the same turn
- Movement distances are based on:
  - Walking
  - Running – defensive standard
  - Running – offensive standard
  - Tokens encumbered with weight (more than 20 kg) or awkward items will be slowed to at least half of maximum

Battleboard Discussion

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- The methodology is a tool that allows for a disciplined and systematic approach to evaluate the effectiveness of a system or program
- The methodology is an integrating tool for all safeguards and security functions
- The methodology is a valuable tool in developing plans and the training to implement those plans
- The methodology is limited only by the imagination of the user
- A low-cost and sustainable analytical tool

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Thank You