

**MODULE 16: CAPSTONE EXERCISE****Day:** 7, 8, 9**Time:** 14.5 Hours**Level of Understanding:** Application

Instructional Strategies:

- Lecture
- Small-Group Exercise

Module Equipment/Facilities:

- Standard Classroom Setup
- 2 copies — Site Survey Report (one per site)
- 2 copies — Intelligence Report 1 (one per site)
- 2 copies — Intelligence Report 2 (one per site)
- 4 — Digital Cameras (one per team)
- Capstone Exercise Presentation Template (located in LEAD folder, load on each laptop)
- 24 — USB Flash Drives (one per participant)
- 4 — Laptop Computers (one per team)
- 4 — Laser Rangefinders (one per team)

Participant Materials/Handouts:

- Workbook 16.1: Capstone Exercise

**Terminal Learning Objective**

By the end of this module, you will be able to apply the concepts and procedures for evaluating the physical protection system of a selected critical infrastructure.

**Introduction**

Now that you have completed all the elements of a vulnerability analysis of a physical protection system for the fictional National Ministries Building in the threaded exercise, it is time to complete the same process using a real facility. Upon completing this capstone exercise, you should feel confident in your ability to evaluate the effectiveness of a physical protection system at any critical infrastructure in your nation. Protecting your critical infrastructure ensures the reliable flow of products and services essential to the defense and economic security of the nation.

**Module Topics**

An outline of key topics and an approximate time plan are shown below. The module times are guidelines only. The actual time required may vary based on the experience level and interest of the participants or other factors encountered during the training session.

Topic	Enabling Learning Objectives	Approximate Time
Capstone Exercise Overview	<ul style="list-style-type: none"> <li>▪ Not Applicable</li> </ul>	30 minutes
Capstone Exercise Part 1: Critical Infrastructure Assessment	<ul style="list-style-type: none"> <li>▪ <i>Module 5</i>—Determine the functional components of critical infrastructure to establish the basis of a vulnerability analysis.</li> </ul>	60 minutes
Capstone Exercise Part 2: Critical Infrastructure Assets	<ul style="list-style-type: none"> <li>▪ <i>Module 6</i>—Analyze critical assets in order to prioritize them for protection.</li> </ul>	60 minutes
Capstone Exercise Part 3: Threats Estimation	<ul style="list-style-type: none"> <li>▪ <i>Module 7</i>—Explain cyberthreats to your organization.</li> <li>▪ <i>Module 10</i>—Create a threat analysis statement for critical infrastructure.</li> </ul>	60 minutes
Capstone Exercise Part 4: Security Inspection and Validation and Site Visit	<ul style="list-style-type: none"> <li>▪ <i>Module 9</i>—Explain the effects of explosives on critical infrastructure.</li> <li>▪ <i>Module 11</i>—Describe the types of policies and procedures needed for the protection of critical infrastructure.</li> <li>▪ <i>Module 12</i>—Develop a security force response plan for the protection of critical infrastructure.</li> <li>▪ <i>Module 13</i>—Develop a security technology response plan for the protection of critical infrastructure.</li> <li>▪ <i>Module 14</i>—Describe how to develop a security inspection and validation program.</li> </ul>	60 minutes (Classroom)  4 hours (Site visit, includes transport)
Capstone Exercise Part 5: Standoff Distances	<ul style="list-style-type: none"> <li>▪ <i>Module 9</i>—Explain the effects of explosives on critical infrastructure.</li> </ul>	60 minutes
Capstone Exercise Part 6: Security Countermeasure Recommendations	<ul style="list-style-type: none"> <li>▪ <i>Module 15</i>—Describe how to apply operational resilience strategies for your country after a terrorist attack, natural disaster, or other threat.</li> </ul>	60 minutes
Capstone Exercise Part 7: Team Preparation	<ul style="list-style-type: none"> <li>▪ Information from all modules</li> </ul>	2 hours
Capstone Exercise Part 7: Team Presentation	<ul style="list-style-type: none"> <li>▪ Information from all modules</li> </ul>	2 hours

**Topic: Capstone Exercise Overview****30 Minutes****Slide 1 Capstone Exercise**

- Title Slide

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**Module Preparation**

- **Timing and Methods:** Use the suggested time plan at the beginning of the module. As with all modules in this course, read all the content (Facilitator Guide and PowerPoint slides) and familiarize yourself with each facilitator note before class.
- Be thoroughly prepared for exercises, discussions, or other activities required for the module. Follow all facilitator notes.
  - Ensure that you have reviewed all exercise directions in **Workbook 16.1: Capstone Exercise**. There is **no answer key for this addendum**, as answers will vary depending on country and critical infrastructure selected.
    - Be sure to refer to the Organizational Matrix table that appears at the beginning of the addendum to ensure that you are aware of the specific time parameters for each section of the exercise.
    - Timing icons will be used in the Facilitator Guide, PowerPoint, and Addendum 16.1 to assist in staying within time limits.
    - Be sure to load the Capstone Exercise Presentation Template from the LEAD folder on each laptop.
  - Be sensitive to the routine and schedule of the site visit locations. Schedule the time of the site visit — either first thing in the morning or right after lunch on Day 8 — to provide the greatest benefit to the site and the class.
  - Ask participants whether they have any questions about anything covered thus far.

**Orientation to Participant Guide**

- When beginning this module:
  - Refer participants to the beginning of this module in the Participant Guide.
  - Note the addendum participants will use during this module. Explain that instructions for the exercise are included in the addendum.

**Slide 2 Module Objective**

- By the end of this module, you will be able to apply the concepts and procedures for evaluating the physical protection system of a selected critical infrastructure

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- Briefly discuss the terminal learning objective.
- Highlight the main topic to be presented: Capstone Exercise.

**Slide 3 Capstone Exercise Addendum (Workbook 16.1)**

- Capstone exercise organizational matrix
- Directions
- Worksheet templates

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- Refer participants to **Workbook 16.1: Capstone Exercise**.
- Explain that the capstone organizational matrix provides participants with the:
  - Reference modules for each part of the capstone exercise.
  - Timing for each part of the capstone exercise.
  - Lists of the tables and templates participants will need to gather information.
- Tell participants that all the directions for each part of the Capstone Exercise are in the addendum and the facilitators will be able to answer any questions the participants have.
- Explain that the worksheet templates will also be loaded on the team laptop computer for the teams' use.

**Slide 4 Timing Icons (Workbook 16.1)**

- 30 minutes
- 60 minutes

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- Tell participants the timing icons will appear throughout the addendum to help them complete their work.
- Display the exercise overview slides for quick reference during the exercise to help teams complete the assigned tasks in the time allotted.

**Slide 5 Capstone Exercise Equipment (Workbook 16.1)**

- Laptop
- Capstone exercise presentation template
- USB flash drive
- Clipboards
- Flip-chart easel and paper
- Digital cameras
- Laser range finder

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- Explain that at various points in this exercise, teams will use the following equipment to facilitate information gathering during the capstone exercise:
  - **Laptop** — teams may use the laptop to store digital pictures, capture notes, and prepare for and present their team's report on the critical infrastructure.
  - **Capstone exercise presentation template** — a Microsoft Office PowerPoint file preloaded on the laptop to help organize their team presentation.

- **USB flash drive** — each participant may retain a copy of the digital pictures taken during the exercise as well as any electronic notes or presentation materials.
- **Clipboards** — to provide a solid writing surface as they complete worksheets away from the classroom.
- **Flip-chart easel** — teams may use to process many types of information to put in the worksheets or make diagrams.
- **Digital cameras** — teams may use the digital camera to capture pictures of the critical infrastructure to help supplement the information they present in their report.
- **Laser range finder**— teams will use the laser range finder to take detailed measurements of the critical infrastructure; the information the range finder provides will be especially useful to determine safe distances from blasts.
- Demonstrate the operation of any equipment with which the participants are not familiar.

### Slide 6 Capstone Exercise Overview (1 of 4) (Workbook 16.1)



- 30 minutes — Capstone Exercise Overview
- 60 minutes — Part 1: Critical Infrastructure Assessment
- 60 minutes — Part 2: Critical Infrastructure Assets
- 60 minutes — Part 3: Threats Estimation

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- Refer participants to **Workbook 16.1: Capstone Exercise**.
- Combine the four teams into two groups of 12 participants (two teams per group).
- Explain that one group will go to Site 1 and the other group will go to Site 2.
- Explain that throughout the capstone exercise, the participants will continue to work in their original team compositions (each team consisting of six participants each).
- Tell participants that each team will evaluate the physical protection system of the selected critical infrastructure (site).
- Tell participants that the facilitators will be available to answer questions and provide additional guidance as needed to ensure the accuracy of their team's physical protection system vulnerability analysis.
- Note: specific facilitator instructions are presented in this guide after the overview is completed.
- Use the organizational matrix in the addendum to explain that in:
  - **Part 1: Critical Infrastructure Assessment**, participants will:
    - Have 60 minutes to complete this part of the capstone exercise.
    - Complete *Table 1: Vulnerability Analysis Team Assignments* and *Table 2: Assess Critical Infrastructure*.
    - Refer to *Module 5: Critical Infrastructure Components* if needed.
  - **Part 2: Critical Infrastructure Assets**, participants will:
    - Have 60 minutes to complete this part of the capstone exercise.
    - Complete *Table 3: Critical Assets Identification*, *Table 4: Undesirable Consequences of Critical Asset Loss Analysis*, and *Table 5: Threat Spectrum Matrix*.
  - **Part 3: Threats Estimation**, participants will:

- Have 60 minutes to complete this part of the capstone exercise.
- Complete *Table 6: Insider Threat Information Worksheet*, *Table 7: Outsider Threat Information Worksheet*, *Table 8: Estimating Likelihood of Attack Worksheet*, and *Threat Analysis Statement*.
- Refer to *Module 7: Cybersecurity* and *Module 10: Analyzing the Threat*.

### Slide 7 Capstone Exercise Overview (2 of 4) (Workbook 16.1)



- 60 minutes — Part 4: Security Inspection and Validation (classroom)
- 4 hours — Part 4: Critical Infrastructure Site Visit

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- **Part 4: Security Inspection and Validation and Site Visit** (classroom), participants will:
  - Have 60 minutes to complete this part of the capstone exercise (it may be appropriate for participants to complete some parts of the worksheets after the site visit).
  - Complete *Table 9: Phase 1—Security Inspection and Validation Planning*, *Table 10: Phase 2—Security Inspection and Validation Checklist (Policies and Procedures)*, *Table 11: Phase 2—Security Inspection and Validation Checklist (Security Force)*, and *Table 12: Phase 2—Security Inspection and Validation Checklist (Security Technology)*.
  - Refer to *Module 11: Policies and Procedures*, *Module 12: Security Force Operations*, *Module 13: Security Technology*, and *Module 14: Security Inspection and Validation*.
- **Part 4: Security Inspection and Validation and Site Visit** (critical infrastructure site visit), participants will:
  - Have 4 hours (including transportation) to complete a site visit.
  - Receive crucial information about the site and threats to the site from the facilitators.
  - Complete *Table 13: Phase 2—Security Inspection and Validation (Preliminary Recommendations)*, *Table 14: Phase 3—Security Inspection and Validation Report*, and *Table 15: On-Site Measurements*.
  - Refer to *Module 9: Explosives and Critical Infrastructure*.
- Inform participants of the transportation arrangements, including if departure is prior to normal class start time.
- Inform participants of any safety restrictions or considerations concerning the site visit, for example:
  - Closed shoes, long sleeves, or long slacks must be worn
  - Safety vests will be provided
  - Safety helmets will be provided (wear hair in a style that will allow helmet to be worn securely)
  - Photographs may not be allowed in certain areas — always ask the guide before taking a photograph

**Slide 8 Capstone Exercise Overview (3 of 4) (Workbook 16.1)**

- 60 minutes — Part 5: Standoff Distances
- 60 minutes — Part 6: Security Countermeasure Recommendations

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- **Part 5: Standoff Distances**, participants will:
  - Have 60 minutes to complete this part of the capstone exercise.
  - Reference *Table 16: ATF—Vehicle Bomb Explosion Hazard and Evacuation Distance* and *Table 17: DoD—IED Safe Standoff Distance Sheet*.
  - Refer to *Module 9: Explosives and Critical Infrastructure*.
- **Part 6: Security Countermeasure Recommendations**, participants will:
  - Have 60 minutes to complete this part of the capstone exercise.
  - Complete discussion questions related to recommendations and main points for an operational resilience plan.
  - Refer to *Module 15: Operational Resilience*.

**Slide 9 Capstone Exercise Overview (4 of 4) (Workbook 16.1)**

- 2 hours — Part 7: Team Preparation
- 2 hours — Part 7: Team Presentations

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- **Part 7: Team Preparation**, participants will:
  - Have 2 hours to complete this part of the capstone exercise.
  - Prepare recommendation presentations derived from information in *Tables 1–17*.
  - Refer to all modules.
- **Part 7: Team Presentations**, participants will:
  - Have 2 hours to complete this part of the capstone exercise.
  - Make team presentations to report their results from the capstone exercises.
  - Refer to all modules.
- Ask participants whether they have any questions about the capstone exercise.
- Respond to all questions to ensure participants understand capstone activities and any safety requirements.

**Topic: Capstone Exercise****14 hours**

Enabling Learning Objective:

- Apply the concepts and procedures for evaluating the physical protection system of a selected critical infrastructure.

**Part 1: Critical Infrastructure Assessment (1 Hour)**

- Remind participants they have 60 minutes to complete this part of the Capstone Exercise.
- Refer participants to *Module 5: Critical Infrastructure Components* if they need help completing this part of the exercise.
- Ensure participants complete the two tables for this part:
  - *Table 1: Vulnerability Analysis Team Assignments*
  - *Table 2: Assess Critical Infrastructure*
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team's laptop to record responses.
- Read the appropriate Site Survey Report to the teams.
- All facilitators should be available in the classroom to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.

**Part 2: Critical Infrastructure Assets (1 Hour)**

- Remind participants they have 60 minutes to complete this part of the Capstone Exercise.
- Refer participants to *Module 6: Critical Infrastructure Assets* if they need help completing this part of the exercise.
- Ensure participants complete the three tables for this part:
  - *Table 3: Critical Assets Identification*
  - *Table 4: Undesirable Consequences of Critical Asset Loss Analysis*
  - *Table 5: Threat Spectrum Matrix*
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team's laptop to record responses.
- Read Intelligence Report 1 to the teams.

### Intelligence Report 1

Your country borders the nation of Freedonia. The government of Freedonia has little control over the country. A large, capable extremist group, the Freedonia Separatists, threatens to take over the country. The group has also conducted several terrorist attacks.

These attacks included a vehicle bomb using a small stolen compact passenger vehicle, which destroyed the front of one of the bordering countries government buildings, and two computer system intrusion attempts into the Freedonia national banking system personnel files that intrusion detection software reported. The intrusions were not successful.

The Freedonia Separatists have publicly stated that they will attack countries in the region that do not recognize them as the official government of Freedonia.

- Note: Facilitators may **not** print or distribute any written materials to participants that ATA has not vetted.
- Facilitators may provide the information verbally or project it on screen.
- Emphasize that these materials are for training purposes only and must not be considered official recommendations.
- All facilitators should be available in the classroom to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.



### Part 3: Threats Estimation (1 Hour)

- Remind participants they have 60 minutes to complete this part of the Capstone Exercise.
- Refer participants to *Module 7: Cybersecurity* and *Module 10: Analyzing the Threat* if they need help completing this part of the exercise.
- Ensure participants complete the following four items for this part:
  - *Table 6: Insider Threat Information Worksheet*
  - *Table 7: Outsider Threat Information Worksheet*
  - *Table 8: Estimating Likelihood of Attack Worksheet*
  - *Threat Analysis Statement*
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team’s laptop to record responses.
- All facilitators should be available in the classroom to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.



#### Part 4: Security Inspection and Validation (1 Hour) and Site Visit (4 Hours)

- Remind participants they have 60 minutes to complete the classroom portion and 4 hours to complete the site visit portion of the Capstone Exercise.
- Refer participants to the following modules if they need help completing this part of the exercise:
  - *Module 9: Explosives and Critical Infrastructure*
  - *Module 11: Policies and Procedures*
  - *Module 12: Security Force Operations*
  - *Module 13: Security Technology*
  - *Module 14: Security Inspection and Validation*
- Ensure participants complete the seven tables for this part:
  - *Table 9: Phase 1—Security Inspection and Validation Planning*
  - *Table 10: Phase 2—Security Inspection and Validation Checklist (Policies and Procedures)*
  - *Table 11: Phase 2—Security Inspection and Validation Checklist (Security Force)*
  - *Table 12: Phase 2—Security Inspection and Validation Checklist (Security Technology)*
  - *Table 13: Phase 2—Security Inspection and Validation (Preliminary Recommendations)*
  - *Table 14: Phase 3—Security Inspection and Validation Report*
  - *Table 15: On-Site Measurements*
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team’s laptop to record responses.
- Remind participants before departure of any restrictions at the site they will be visiting, such as no photographs or safety requirements.
- Explain the process for transportation to and from the site, and any rules that must be followed while on-site.
- Tell participants they must remain with their teams at all times during the site visit.
- Ensure participants have all tools they need before leaving the training facility, such as their clipboards, laser range finder, cameras, exercise materials, and laptops.
- Be sure to bring extra batteries for the digital cameras during the site visit.
- If identification is needed to access the facility, ensure all participants bring proper documentation, such as a driver's license or badge.
- Ensure participants know what time the transportation will be leaving the site to return to the training facility.
- All facilitators should be available in the classroom and during the site visit to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.



### Part 5: Standoff Distances (1 Hour)

- Remind participants they have 60 minutes to complete this part of the Capstone Exercise.
- Refer participants to *Module 9: Explosives and Critical Infrastructure* if they need help completing this part of the exercise.
- Ensure participants complete the two tables for this part:
  - *Table 16: ATF—Vehicle Bomb Explosion Hazard and Evacuation Distance*
  - *Table 17: DoD—IED Safe Standoff Distance Sheet*
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team’s laptop to record responses.
- Read Intelligence Report 2 to participants.

#### Intelligence Report 2

Intelligence sources have indicated that the Freedonia Separatists have a quantity of explosives that they are planning to use soon.

Information about the current situation and the group’s history is in the table below.

<b>Type of Explosive</b>	TNT
<b>Amount of Explosives Reported by Sources</b>	A large quantity of explosives, estimated to be approximately 450 kilos of TNT along with electric detonators, was stolen from a military camp.
<b>History of Explosives with this Group</b>	In the recent past the Freedonia Separatists have conducted two vehicle bombings using stolen compact passenger vehicles parked in general public access areas. Both devices used homemade explosives. One failed to detonate and the other was successful. Both attacks were directed at government facilities in public access areas. Additional unsupported intelligence indicates the Freedonia Separatists have attempted to recruit suicide bombers.
<b>How They May Use the Explosives</b>	Based on history, the most likely method of attack will be a vehicle bomb parked in a public access area.

- All facilitators should be available in the classroom to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.



### Part 6: Security Countermeasure Recommendations and Resilience Plan (1 Hour)

- Remind participants they have 60 minutes to complete this part of the Capstone Exercise.
- Refer participants to *Module 15: Operational Resilience* if they need help completing this part of the exercise.
- Ensure participants complete the two items for this part:
  - Discussion questions related to recommendations
  - Operational resilience plan main points: prevention, preparedness, response, and recovery
  - Record team responses to each exercise in spaces provided within **Addendum 16.1: Capstone Exercise** in order to maintain complete and accurate documentation — teams may also choose to use their team’s laptop to record responses.
- All facilitators should be available in the classroom to answer questions and provide assistance — if any team appears to be having difficulties, assign a facilitator to remain as a member of that team to guide them through the rest of the exercise.

### Part 7: Team Preparation and Presentations



#### Team Preparation (2 Hours)

- Remind participants they have 2 hours to complete the **Team Preparation** portion of Part 7.
- During Part 7: Team Preparation, participant teams will review their final recommendations and prepare post-exercise presentations.
- To complete Part 7, teams should:
  - Discuss final recommendations.
  - Organize all completed tables (*Tables 1–17*) to ensure easy access when called upon by facilitator to share responses.
  - Use the capstone exercise presentation template as a guide for their presentations.
  - Select a spokesperson to present to the class, when directed.
  - Complete all preparations for the presentations.
  - Ensure report is complete and accurately illustrates final recommendations
- All facilitators should be available in the classroom to answer questions and provide assistance.



### **Team Presentations (2 Hours)**

- Remind participants they have 2 hours to complete the **Presentations** portion of Part 7.
- Explain that during their presentations teams will present their answers to the facilitators, who will serve as an evaluation board.
  - The evaluation board (facilitators) may sit at the front or the back of the room at a table.
  - Instruct each team spokesperson to begin his or her presentation by introducing the team members and identifying the role of each member of the team.
  - Remind spokespersons that this information should appear in **Workbook 16.1: Capstone Exercise, Table 1: Vulnerability Analysis Team Assignments**.
- During the participant team presentations, check for understanding and provide detailed feedback.
- After the presentations are complete, remind participants to save their work on the USB flash drives.
- Explain that by saving their presentations to their flash drives, they will have copies of their work for future reference.
- Remind participants that these materials are for training purposes only and must not be considered official recommendations.