



MassDEP Geographic Response Plan – 2016 Rock Harbor (CI-04) Exercise

April 26, 2016

The After-Action Report/Improvement Plan (AAR/IP) aligns exercise objectives with preparedness doctrine to include the National Preparedness Goal and related frameworks and guidance. Exercise information required for preparedness reporting and trend analysis is included; users are encouraged to add additional sections as needed to support their own organizational needs.

EXERCISE OVERVIEW

Exercise Name	2016 Rock Harbor (CI-04) GRP Exercise
Exercise Dates	April 26, 2016
Scope	This exercise was a Full Scale Exercise, planned for approximately six hours in Orleans and Eastham, MA and upon the waters of the Rock Harbor. Exercise play was limited to Rock Harbor and the adjacent shoreline.
Mission Area(s)	Response
Core Capabilities	Environmental Response/Health and Safety, Operational Coordination, Operational Communications
Objectives	<p>Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.</p> <p>Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Assignment List (ICS 201) and implementation of on-site incident management and tactical operations.</p> <p>Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbormasters, and other state and federal first responders using VHF communications.</p>
Threat or Hazard	Discharge of oil into a navigable waterway
Scenario	An oil spill has occurred that threatens Rock Harbor. The Orleans, Eastham, and Brewster Fire Departments and Harbormasters staff will utilize GRP CI-04 to deploy protective booming to protect sensitive resources in and near Rock Harbor.
Sponsor	Massachusetts Department of Environmental Protection (MassDEP).

**Participating
Organizations**

Participating organizations included:

- Orleans Fire Department (OFD)
- Orleans Harbormaster (OHM)
- Brewster Fire Department (BFD)
- Brewster Harbormaster (BHM)
- Eastham Fire Department (EFD)
- Eastham Harbormaster (EHM)
- Barnstable County Emergency Management Agency (EMA)
- Barnstable County Sherriff's Department
- MassDEP
- Massachusetts Department of Fire Services
- U.S. Coast Guard Sector Southeastern New England (USCG)
- Moran Environmental Recovery (MER)
- Nuka Research and Planning Group, LLC (Nuka Research)

Note: See Appendix B for participant count

Point of Contact

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Containment boom being towed into position around the fishing vessel RUTH & GALE.



Photo courtesy of Nuka Research & Planning Group

First Responders from Eastham, Brewster and Orleans deploy boom from a MassDEP oil spill response trailer.



Photo courtesy of Nuka Research & Planning Group

ANALYSIS OF CORE CAPABILITIES

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 1 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team. Table 2 includes compiled data from the Exercise Evaluation Guide (EEG) including the organizational capability targets, associated critical tasks, and observations as observed during the exercise and determined by the evaluation team.

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics.	Environmental Response/ Health and Safety	P			
Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.	Operational Coordination	P			
Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire, police and harbormaster departments using VHF communications	Operational Communications	P			
<p>Ratings Definitions:</p> <ul style="list-style-type: none"> • Performed without Challenges (P): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. • Performed with Some Challenges (S): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or efficiency were identified. • Performed with Major Challenges (M): The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws. • Unable to be Performed (U): The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s). 					

Table 1. Summary of Core Capability Performance

Core Capability	Organizational Capability Target	Associated Critical Tasks	Observation Notes
<p>Environmental Response/ Health and Safety</p>	<p>Overview of Response Equipment</p>	<ul style="list-style-type: none"> • Access Mass DEP Trailer • Identify boom and sorbents • Connect boom together • Connect towing bridle to boom • Connect components of anchor system together 	<ul style="list-style-type: none"> • Performed without Challenges (P) • All skills successfully demonstrated during the exercise • MassDEP trailers were readily accessible. All response equipment readily available and in good condition with some minor exceptions. • 12" boom in Orleans trailer was in the way initially but trailer team did an excellent job of moving it and accessing the 18" boom. It was noted in the hot wash that in an emergency, the 12" and 18" could be used together in a protected environment like Rock Harbor. • Brewster, Eastham & Orleans trailers did not have slide hammers. Recommendation: <u>MER replace the sledgehammers in these trailers with slide hammers during the routine maintenance cycle.</u> • Eastham trailer did not have any floats. Recommendation: <u>MER replace the floats in the trailer.</u> • Small sections of boom and mock rebar shore anchor proved to be outstanding instructional aids. They facilitated indoor instruction during inclement weather. • All personnel had the opportunity to connect boom sections for familiarization.
	<p>Basic Booming Operations</p>	<ul style="list-style-type: none"> • Transport and tow boom. • Anchoring and Connecting boom to shore • <i>Safe</i> vessel and crew operations. (Refer to ICS-208) 	<ul style="list-style-type: none"> • Performed Without Challenges (P) • Boom successfully deployed from trailer using bow tow method. Boats used bow/hip/stern tow methods when towing boom during diversion and containment evolutions. All towing conducted with skill. • Trip lines employed for first time. Made anchoring evolution much safer and adjustments much easier. Recommendation: <u>Continue with program for providing all trailers with trip lines.</u> • All boats conducted safe boom towing operations. In the tight quarters of Rock Harbor, there were some instances where the boom contacted the floating pier while it was being towed. Members of the shore team were quickly able to keep the boom away from the floating piers and being damaged. There was one instance of a boat crew member briefly holding boom instead of cleating during towing operations This was noted and corrected on the spot. Good lesson for all.

			<ul style="list-style-type: none"> Trailer personnel showed great teamwork in getting boom out to boats from boat ramp. Trailer team noted that monkey fists or some other heaving line would have been extremely useful in getting the towline to boats in the boat ramp area. Trailer team showed great initiative by sending a person along the pier to capture the bridle and pull it back to the trailer for recovery. Recommendation: <u>Add heaving lines to trailer inventory.</u> Proper decontamination of boom and trailer conducted by Orleans FD after it was submerged in salt water. Eastham shore team did an outstanding job of setting up a shore anchor using triple rebar. They also used a best practice of using line to hold up rebar while using a sledgehammer to drive it into the sand. Recommendation: <u>This best practice should be included in the training curriculum.</u> Orleans shore team did an excellent job of attaching boom to existing piles and then shifting to a pier closer to shore. Both attachments were secure. All boats did an excellent job of attaching anchors to properly configure the diversion boom and containment boom. Safety officer did an excellent job.
	<p>Implement Tactics in GRP</p>	<ul style="list-style-type: none"> Deploy Diversion Boom Tactic Deploy Containment Boom Tactic 	<ul style="list-style-type: none"> Performed Without Challenges (P) Diversion booming tactic successfully deployed as modified for weather conditions and time considerations and to allow the channel to be kept open for traffic. Modification was implemented as planned. Deployed north side of diversion tactic due to time considerations. Recommendation: <u>Revision of both DV-01a and DV-01b is recommended as multiple diversion booms seem to be redundant in this area.</u> Surrogate was deployed but the northwest wind, which was opposed to the current, drove the surrogate to the southwest. There is little doubt that the surrogate would have been captured by the boom and driven to the designated shore side recovery area had the wind direction and speed been different. Containment boom was deployed around the fishing vessel Ruth & Gale. Their cooperation in allowing the exercise participants to use their vessel during training is greatly appreciated.

<p>Operational Coordination</p>	<p>Create and Execute An Assignment List (ICS 201)</p>	<ul style="list-style-type: none"> • Fill out ICS 201 • Assignments in ICS 201 are followed and on-scene adjustments. • Participants demonstrate command and control of exercise 	<ul style="list-style-type: none"> • Performed without Challenges (P) • Participation by the Fire and Harbormaster Departments from Brewster, Orleans and Eastham was excellent and everyone worked well together. All exercise participants were extremely engaged and active, despite inclement weather. • The IC was very effective in directing the exercise, which involved multiple assets and multiple towns. All units operated in a safe manner. • Assignments were followed and adjustments made as necessary by boat crews and shore teams. • Barnstable County Incident Management Assistance Team (IMAT) participated in the exercise and did an outstanding job of coordinating check-in, facilitating BF/OT paperwork, providing communications plan and medical plan. Their participation greatly contributed to the success of this exercise. • The use of the DFS Rehab Unit provided an outstanding resource to keep personnel out of the rain and cold, enabling participants to remain engaged in the drill after taking refuge there. Personnel operating the Rehab Unit were extremely helpful and supportive of the exercise. Their participation greatly contributed to a safe and productive training event. Recommendation: <u>Provide information for the Rehab Unit to exercise planning team for future training events.</u>
<p>Operational Communications</p>	<p>Effectively Communicate Using VHF equipment</p>	<ul style="list-style-type: none"> • Create Communications Plan • Communicate with other participants using organic UHF equipment • Communicate with other participants using organic VHF equipment • 	<ul style="list-style-type: none"> • Performed without Challenges (P) • Communications plan was followed as designed. All participants used the identified frequencies for exercise communications. Both UHF and VHF frequencies were used. • The Barnstable County Emergency Communication Center (S-39) cross-patched frequencies and was a tremendous asset. • Barnstable County's use of the State Police 800MHZ system continues to be an exemplar of communications for interdepartmental operations.

Table 2. Summary of Organizational Capability Targets and Associated Critical Tasks

The following sections provide an overview of the performance related to each exercise objective and associated core capability, highlighting strengths and areas for improvement.

Objective 1: Demonstrate the ability to deploy oil spill equipment from one or more MassDEP pre-positioned oil spill response trailers utilizing common Geographic Response Plan (GRP) tactics

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 1: Environmental Response/Health and Safety

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: Participants from multiple agencies and contractors (Eastham, Orleans, Brewster Moran Environmental, MassDEP) worked well together to complete assigned tasks.

Strength 2: All participants conducted the boom deployment safely.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Revise Rock Harbor GRP (CI-04) to change the boom configuration for tactics DV-01a and DV-01b.

Reference: Massachusetts Geographic Response Plan Tactics Guide

Analysis: The Rock Harbor GRP (CI-04) GRP needs to be revised to eliminate the redundancy in boom configurations for tactics DV-01a and DV-01b. The multiple boom configurations are redundant and can be simplified to make better use of oil spill response resources with the same amount of effectiveness.

Area for Improvement 2: MER replace the sledgehammers in the Orleans, Brewster and Eastham Fire Department trailers with slide hammers during the routine maintenance cycle.

Reference: N/A

Analysis: Slide hammers are much safer than sledgehammers for driving rebar stakes into the ground. Some MassDEP trailers have already been outfitted with slide hammers. Sledgehammers should be replaced with slide hammers in all MassDEP trailers during upcoming routine maintenance cycles.

Area for Improvement 3: Replace the floats in the Eastham trailer.

Reference: N/A

Analysis: During the exercise, it was noted that there were no floats in the Eastham trailer. These floats are necessary to deploy the boom equipment and should be replaced during the routine maintenance cycle.

Area for Improvement 4: Add monkey fist or heaving lines to MassDEP trailer equipment inventory.

Reference: N/A

Analysis: There were instances during this drill where a heaving line of some sort would have been useful for passing towlines for boom from the shore team to a boat to keep the boat from being damaged on the concrete boat ramp.

Area for Improvement 5: Incorporate into the curriculum the best practice of using line to hold rebar while driving it into the ground with a sledgehammer.

Reference: N/A

Analysis: For trailers that do not have slide hammers yet, this practice of holding a piece of rebar in place with a line while hammering it into the ground with a sledgehammer is a much safer practice than having a person hold the rebar in their hand. This needs to be shared with first responders during the classroom session to promote safety. See the picture on page 12 of this report.

Objective 2: Demonstrate the ability to assemble a spill response organization utilizing Incident Command System (ICS) principles through development and execution of an Incident Briefing (ICS 201) and implementation of on-site incident management and tactical operations.

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 2: Operational Coordination

Strengths

The full capability level can be attributed to the following strengths:

Strength 1: The Incident Commander did an excellent job of controlling the many assets involved in this exercise. All teams knew their tasks and objectives during the exercise and appropriate direction was provided.

Strength 2: • Barnstable County Incident Management Assistance Team (IMAT) participated in the exercise and did an outstanding job of coordinating check in, facilitating BF/OT paperwork,

providing communications plan and medical plan. Their participation greatly contributed to the success of this exercise.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Provide information for obtaining a Rehab Unit to exercise planning teams for future training events.

Reference: <http://www.mass.gov/eopss/agencies/dfs/dfs2/emerg-resp-invest/special-ops/apparatus-equip/>

Analysis: The use of the Rehab Unit provided an outstanding resource to keep personnel out of the rain and cold, enabling participants to remain engaged in the drill after taking refuge there. Personnel operating the Rehab unit were extremely helpful and supportive of the exercise. Their participation greatly contributed to a safe and productive training event

This was the first GRP exercise involving a Rehab unit. They are equipped with the resources needed to facilitate proper firefighter/rescuer rehab. They provide: heat, air conditioning, fluids, rehab supplies, and medical monitoring equipment to assist the local EMS. There are 4 Rehab Units strategically placed around the state to assist local Fire Departments with shelter, hydration, and medical screening for emergency responders. The Rehab Units function under NFPA 1584 Standard, and the OEMS Statewide Treatment Protocol for all medical concerns for both emergency scenes and drills. Requests for Rehab Units should be placed by the Fire Chief hosting the GRP exercise or his designee to the State Fire Marshal. These resources are provided at no expense to the local requesting community.

Objective 3: Demonstrate the ability to effectively communicate between multiple local, state, and federal agencies including fire departments, police departments, harbormasters, and other state and federal first responders using VHF communications

The strengths and areas for improvement for each core capability aligned to this objective are described in this section.

Core Capability 3: Operational Communications

Strengths

The full capability level can be attributed to the following strengths:

Communications was a strong point of the exercise.

Strength 1: Clear and effective communications between all participants was maintained throughout the exercise. All marine units were able to use CH-17 VHF-FM. The Barnstable County Emergency Communication Center (S-39) cross-patched frequencies and was a

tremendous asset. Barnstable County’s use of the State Police 800MHZ system continues to be an exemplar of communications for interdepartmental operations.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: None.

Reference: Massachusetts Statewide Communications Interoperability Plan.

Analysis: N/A

The Barnstable County Emergency Communication Center (S-39) provides communications support for exercise participants



Photo courtesy of Nuka Research & Planning Group

Brewster fire boat prepares to launch at Rock Harbor



Photo courtesy of Nuka Research & Planning Group

Boom on the west shore of Rock Harbor is demobilized.



Photo courtesy of Nuka Research & Planning Group

The use of the Rehab Unit provided an outstanding resource to keep personnel out of the rain and cold, enabling participants to remain active in the drill.



Photo courtesy of Nuka Research & Planning Group

MER personnel conduct hands-on equipment familiarization and training for Brewster, Eastham and Orleans first responders.



Photo courtesy of Nuka Research & Planning Group

A piece of rebar used for a shore anchor is held in place with line instead of relying on personnel holding it; a safe and best practice.



Photo courtesy of Nuka Research & Planning Group

APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for Orleans, Eastham, and Brewster Fire Departments and Harbormasters following the Massachusetts Department of Environmental Protection Rock Harbor GRP Exercise conducted on April 26th, 2016.

Core Capability	Issue/Area for Improvement	Corrective Action	Capability Element ¹	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Core Capability 1: Environmental Response/Health and Safety	1. Implement Tactics in GRP	Revise Rock Harbor GRP (CI-04) DV-01a and DV-01b.	Planning	Nuka Research	Mike Popovich	5/15/16	9/1/16
Core Capability 1: Environmental Response/Health and Safety	2. Overview of Response Equipment	MER replace the sledgehammers in Eastam, Brewster and Orleans trailers with slide hammers	Equipment	MER	John Duponte	5/15/16	12/15/16
Core Capability 1: Environmental Response/Health and Safety	3. Overview of Response Equipment	<u>Replace the floats in the Eastham trailer.</u>	Equipment	MER	John Duponte	5/15/16	12/15/16
Core Capability 1: Environmental Response/Health and Safety	4. Overview of Response Equipment	Add monkey fist or heaving lines to MassDEP trailer equipment inventory.	Equipment	MER	John Duponte	5/15/16	12/15/16
Core Capability 1: Environmental Response/Health and Safety	5. Overview of Response Equipment	Incorporate best practice of using line to hold rebar while driving it into the ground with a sledgehammer.	Training	Nuka	Mike Popovich/	5/15/16	5/24/16
Core Capability 2: Operational Coordination	1. Participants demonstrate command and control of exercise	Provide Rehab Unit information to exercise planning team for future events.	Exercise	Nuka	Mike Popovich/	5/15/16	7/1/16
Core Capability 3: Operational Communications	N/A						

¹ Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations	
Town of Orleans, MA	Participant Count
Orleans Fire Department	8
Orleans Harbormaster	3
Town of Brewster MA	
Brewster Fire Department	10
Brewster Harbormaster	2
Town of Eastham MA	
Eastham Fire Department	7
Eastham Harbormaster	2
Barnstable County	
Barnstable County Sherriff	2
Barnstable County IMAT	3
COUNTY/TOWN PARTICIPANTS	36
Federal	
United States Coast Guard (USCG)	3
State	
Massachusetts Department of Environmental Protection (MassDEP)	2
Massachusetts Department of Fire Services	2
Nuka Research and Planning Group, LLC (contractor for MassDEP)	3
Moran Environmental Recovery (contractor for MassDEP)	2
TOTAL	48

Special appreciation is warranted for the owner, master and crew of the fishing vessel Ruth & Gale. Their cooperation in allowing the participants to use their vessel during the containment booming portion of the exercise is greatly appreciated.

APPENDIX C: EXERCISE EVALUATION FORM



**MassDEP
Geographic Response Plan (GRP)
Exercise and Testing Program**

Participant Feedback Form

1 Strongly disagree	2 Mildly disagree	3 Neutral	4 Mildly agree	5 Strongly agree
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Please use the above rating scale to answer the questions for each of the following topics.

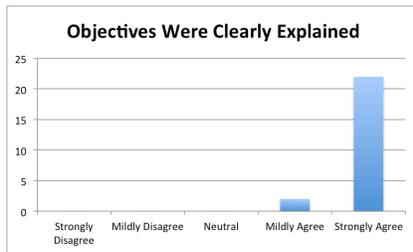
The objectives were clearly explained and the exercise met those objectives.	1 2 3 4 5
Comments:	
The material appropriately challenged me and the pace of instruction was correct.	1 2 3 4 5
Comments:	
The instructor(s) did an excellent job.	1 2 3 4 5
Comments:	
I found the classroom to be a comfortable learning environment.	1 2 3 4 5
Comments:	
I feel more prepared to respond to an oil spill than I did before this exercise.	1 2 3 4 5
Comments:	
The best thing about this training was _____.	
This training could have been improved by _____.	

Please use the back of the sheet if you need more room for comments.

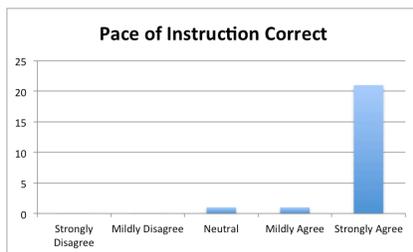
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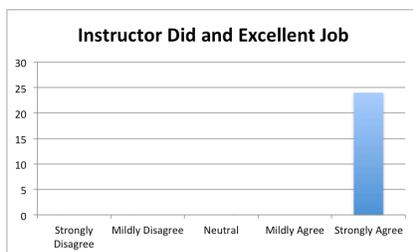
Student Feedback Summary



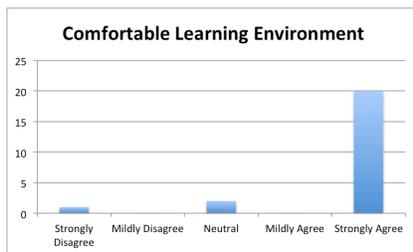
Student Comments: “Excellent program. Clear description/plan.”



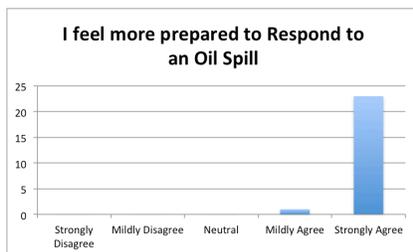
Comments: “No problems”



Comments: “Clear, concise, and to the point. Knowledgeable”



Comments: “Great guys.”



Comments: “Utilization of equipment was helpful.”

The best thing about this training was... “Agency interaction/cooperation. Practical experience/use of equipment. Being on the water. Food”

This training could be improved by.... “Sunshine/Improved Weather.”