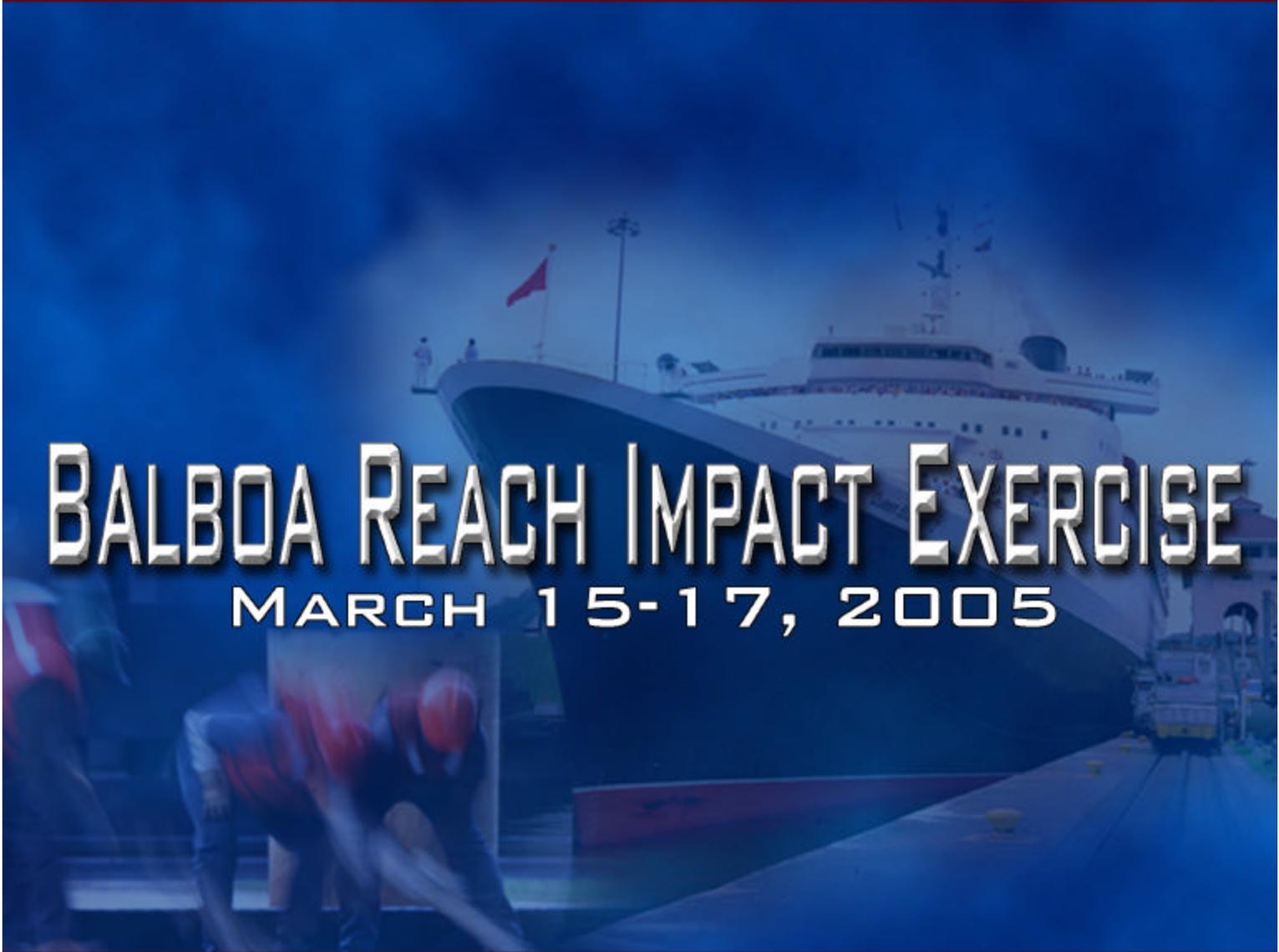


# AFTER ACTION REPORT

A large white cargo ship is docked at a pier. In the foreground, several workers wearing red hard hats and dark clothing are bent over, working on the pier. The scene is set against a blue sky and a dark blue background.

# BALBOA REACH IMPACT EXERCISE

MARCH 15-17, 2005

NATIONAL RESPONSE TEAM/PANAMA CANAL AUTHORITY



# **After Action Report**

## **Balboa Reach Impact Exercise March 15-17, 2005**

**National Response Team/Panama Canal Authority**

**Promulgated June 2005**



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## **Executive Summary**

The Balboa Reach Impact Exercise After Action Report (AAR) is intended to assist the Autoridad del Canal de Panamá (Panama Canal Authority) (hereinafter referred to as “ACP”) and the National Response Team (NRT) improve preparedness and response capabilities in the Panama Canal (hereinafter referred to as “the Canal”). This exercise strengthened the relationship between the ACP and NRT and provided an opportunity to test the Memorandum of Agreement (MOA) signed between ACP and NRT in 2002.

Balboa Reach Impact was a training, exercise, and evaluation evolution. The exercise focused on achieving three key objectives: evaluate the ability of ACP and NRT to jointly implement response actions; appraise the effectiveness of ACP’s Crisis Action Center (CAC) for use in a major incident; and assess the ability to undertake a thorough planning cycle using the Incident Command System (ICS) (as it forms the basis for the response structure in the ACP’s Contingency Plan).

Training sessions were provided on ICS, best response practices, and the ACP’s Contingency Plan prior to the exercise. Special topic briefings were presented by ACP and NRT representatives to provide additional information to the exercise participants on each organization’s capabilities and response processes. The capstone notification and tabletop exercise (which included a scenario of a 55,000 barrel oil spill at the Pacific entrance to the Canal) tested the objectives set by the exercise design team.

Balboa Reach Impact Exercise also provided a venue for the ACP to demonstrate its exemplary qualified personnel, technical capability, and resource assets. The exercise met the objectives set forth prior to the exercise, revitalized and improved the NRT and ACP coordination, and reinforced the commitment by both organizations to continue their future coordination. Furthermore, the exercise facilitated a significant increase in the appreciation for ICS and the Panama Canal Area Contingency Plan among all exercise participants.

Several areas for improvement were identified by exercise participants to facilitate future joint ACP/NRT responses. They include focusing on both cost and financial considerations and expanded utilization of the Contingency Plan; maintaining and enhancing the NRT-ACP working group; and improving coordination processes between the two organizations and their partner and member organizations.

Several recommendations and opportunities for improvement were identified during the exercise, and are detailed in the Exercise Evaluation section of this Report.

Note: The suggested improvement actions offered in this report are recommendations. In some cases, the ACP or NRT may determine that particular tasks and activities are outside of their scope and capability at the present time or in the future. Similarly, alternative solutions may be identified that are more effective and efficient.

## **Exercise Overview**

### **Dates and Location**

The exercise was held from March 15 to March 17, 2005, in Panama City, Republic of Panama. The training workshop and notification exercise was held on Tuesday, March 15, 2005, at the ACP Training Center, Building 704, Balboa. Facilitated exercise play, held on Wednesday, March 16, 2005, was conducted at the ACP CAC at Corozal. The hotwash, held on Thursday, March 17, 2005, was conducted at the ACP Training Center, Building 704, Balboa.

### **Participating Organizations**

Multiple offices within ACP and multiple member agencies of the NRT participated in the exercise.

#### *ACP Offices*

- Transit Operations Division
- Emergency and Contingency Management Division
- Canal Protection Division
- Environmental Management Division
- Development and Training Division
- Office of National Public Affairs

#### *NRT Member Agencies*

- U.S. Coast Guard (USCG)
  - Headquarters, Office of Response
  - Gulf Strike Team (GST)
  - National Strike Force Coordination Center (NSFCC)
- U.S. Environmental Protection Agency (EPA)
  - Headquarters, Office of Emergency Management
  - Environmental Response Team (ERT)
- U.S. Department of Defense, Navy Supervisor of Salvage and Diving (SUPSALV)

As the federal point of contact for reporting oil and chemical spills in the United States, the National Response Center (NRC) remotely participated in the exercise, receiving incident notification from the ACP and notifying the NRT Chair.

### **Concept and Design**

On April 1, 2002, the ACP and the United States Department of State, EPA, and USCG, signed an MOA regarding assistance in certain environmental pollution incidents in the Canal. A key facet of this agreement directs the signatory parties to conduct an annual tabletop exercise to “ensure continuity of communications, planning, and operations.”

In the two years preceding the Balboa Reach Impact exercise, two notification exercises were held between NRT agencies and the ACP. These notification exercises were conducted via conference call, with objectives set forth and a written scenario to set the scene for exercise play. An evaluation and hotwash were conducted following each,

which focused on exercise successes, areas for improvement, and proposed corrective actions.

The NRT and ACP representatives began planning for a table top exercise in July 2004. To that end, they held an exercise planning meeting on November 30 and December 1, 2004, in Panama City, Republic of Panama. The scenario and objectives for the Balboa Reach Impact exercise were conceived at this meeting and the foundation was built upon in subsequent bi-monthly conference calls between the parties.

The exercise was structured with the intent of strengthening coordination between ACP and NRT. Therefore, the training sessions on the first day of the exercise focused on the structure and implementation of the recently revised Panama Canal Area Contingency Plan and the ICS planning process, upon which the Plan is based. The training was designed to promote awareness on the Contingency Plan for both NRT and ACP participants and to reinforce the benefits of ICS for large scale response and recovery. NRT members gained an appreciation for the range of ACP response capabilities and features of the Area Contingency Plan. More important, participating ACP representatives were re-introduced to its potential. Exercise participants received a briefing on the scenario prior to training on the ICS planning process to facilitate effectual discussion.

Training also encompassed best response practices and lessons learned from previous responses in the United States and the Canal Area. All of the training sessions were valuable to the execution of scenario play and exercising, as they provided a background and foundation for response planning.

The second day consisted of a full day tabletop exercise, using ICS planning, operational, and logistics meetings for the 24-hour operational period. The third day was dedicated to a hotwash to discuss the positive aspects or successes of the exercise, and the issues or improvement actions to fuel corrective action.

### **Purpose and Scope**

The purpose of the exercise was to improve coordination between NRT and ACP. This is best accomplished when the two organizations follow the ICS system. The Panama Canal Area Contingency Plan dictates that the ACP use ICS, and the National Response Plan (NRP) requires the NRT to use ICS. The exercise facilitated training and preparation for a Tier 3 incident in which NRT resources and technical assistance will be brought into the Canal Area. Such training and pre-incident coordination will assist the emergency planning and preparedness needs of the Canal, its customers and stakeholders, and the NRT.

The exercise was also designed to evaluate the effectiveness of the recently built, state-of-the-art CAC, which will be utilized more frequently because on January 1, 2005, Panama implemented the requirements of the Panama Canal Shipboard Oil Pollution Emergency Plan (PCSOPEP). Under this program the ACP assumed responsibility for providing oil spill response for spills within the Canal Area.

Other major goals included demonstrating how the NRT would activate and send a Technical Assistance Team (TAT) to fit into the ACP response system. It was important to discuss and exercise the timing of activation of the ACP-NRT MOA, and thus, NRC notification. Contacting the NRT early enough during the response will enable the NRT to provide effective support, and the ACP to make efficient use of NRT resources for a major response.

The tabletop exercise did not involve deployment of actual resources. However, NRT personnel did participate in the exercise in-country, with deployment of NRT TAT personnel and staging of resource mobilization coordinated via the primary notification conference call with ACP. The CAC was activated on the second day of the exercise, with facilitated exercise proceedings taking place there and CAC resources being utilized. A full planning cycle was completed during exercise play and an Incident Action Plan (IAP) was developed and approved by the Incident Commander. *(See Appendix D for full text of the IAP.)*

## **Exercise Goals and Objectives**

The major objectives were developed and agreed upon by the NRT-ACP design team and key ACP authorities.

### **Objectives**

The major objectives of the exercise were as follows:

1. Evaluate the ability of the ACP and the NRT in implementing response actions in accordance with the Memorandum of Agreement. The factors which will help determine the degree of success:
  - Notification Process;
  - Use of the Incident Specific Agreement;
  - Integration of the TAT into the ACP's structure; and
  - Public information and internal communication management.
2. Evaluate the effectiveness of the CAC for a major incident. Items to be considered include, but are not limited to:
  - Size and Distribution;
  - Communication equipment (e.g., intercom, radio, telephone), video, and computers;
  - White boards, message boards, and other displays;
  - Meeting rooms, break rooms, restrooms;
  - Technical support;
  - Compatibility with nearby operations; and
  - Environment (e.g., lighting, noise level, flexibility).
3. Undertake a thorough planning cycle, which produces a written action plan in accordance with the response structure, considers future operational periods, and maintains proper activity logs.

### **Goals**

The goals of the exercise with respect to ACP and NRT coordination were to:

1. Ensure that effective communications between ACP and NRT can be established in a timely manner;
2. Ensure effective methods for information request and follow up once the notification process has started; and
3. Integrate the NRT response personnel into the ACP ICS structure once the TAT and response personnel arrive at the Canal Area.

## **Exercise Proceedings**

### **Overview**

The three day exercise was structured to include certain training sessions, provided by both ACP and NRT, prior to beginning the actual exercise play. Day One of the exercise encompassed training on the following key topics:

- Panama Canal Area Contingency Plan;
- ICS Planning Process; and
- Best Response: Lessons Learned.

The exercise began with a notification exercise, held on Day One following the training sessions. Facilitated exercise play, continued throughout Day Two from the Crisis Action Center, integrated an ICS meeting schedule and completion of ICS forms, as part of an IAP. Additional special topic briefings were presented throughout the three-day exercise, which provided information on special interest topics, such as operating procedures, capabilities, and initiatives. The briefings were presented by subject matter experts. Special Topic Briefings included:

- Oil Pollution Response: Capabilities and Future Outlook;
- Security Coverage for Hazardous Cargo, Security Details, and Security Contingencies; and
- U.S. Environmental Protection Agency Response Support Capabilities.

### **Training**

*Panama Canal Area Contingency Plan (See Appendix B for full training presentations)*

The Contingency Plan focused on the value of using one plan, rooted in ICS, to facilitate any type and size of incident response. The Contingency Plan ensures the ability to ascertain effective resolution of emergency situations at the Canal arising from accidents, natural events, sabotage, or terrorism. It is grounded in the best response concept, ensuring that five key factors are all taken into consideration during a response. These factors include protection of human health; safeguarding the natural environment through control of discharges into the Canal Area and recuperation of natural resources; positive media coverage and public perception; reduction of economic impacts; and minimization of stakeholder impact, in addition to assurance of stakeholder support.

The Contingency Plan is accessible via the ACP Intranet, provides easy access to information, and includes information of activation criteria. The Contingency Plan will be activated in the following cases:

- Mass casualty;
- Oil spills more than 1000 gallons;
- Hazardous materials releases more than 500 gallons or pounds;
- Radioactive materials;
- Uncontrolled ship fires;

- Potential economic loss of greater than \$100,000; or
- An adverse effect on the Canal's image.

The Contingency Plan provides valuable information for use in incident reporting, notification procedures, evaluation by first responders, establishing an incident management system, and development of action plans. It includes a Field Operations Guide (FOG), planning cycle, forms, general information, NRT contact information, and a glossary. Contained within the electronic Contingency Plan is a contact database with ACP and contract personnel information, in addition to a resource database, which includes resource listings within ACP, the Panamanian government, private industry, and those resources and equipment capable of acquisition through international agreements.

The Geographic Information System (GIS) within the Contingency Plan can be used to find information such as location of resources; areas where vessels can be safely beached; areas of environmental sensitivity (index map); location of oil spills; police, fire, and Emergency Medical Services (EMS) stations; evacuation routes; and plume/oil spill modeling. The models are currently being validated for use in future training sessions.

*ICS Planning Process/Best Response: Lessons Learned (See Appendix B for full training presentations)*

This training included background information on ICS, including how it originated through its adoption internationally as an incident management system. ICS was adopted by the USCG for oil spill response in 1996, and further adopted for all USCG response activities in 1999. A national ICS training curriculum has been developed and implemented within the USCG to ensure that all personnel receive the same extent of training, from an awareness level to a position-specific level.

ICS provides a valuable system through which all agencies can be integrated into the response and all response activities can be communicated to the media. Within the United States, a recently signed Presidential Directive mandated development, training, and use of ICS for all incidents of national significance. Use of ICS facilitates personal accountability (through use of check-in lists, chain of command, and resource status cards), integrated communications, resource management, development of the IAP, and use of Unified Command (UC), particularly during large incidents. Training emphasized the importance of incident management by objective; use of common terminology as applied to organizational elements, position titles, resources, and facilities; and information management both internally and externally.

Training also highlighted essential steps in incident action planning. These included the value of holding tactics and planning meetings in development of an IAP; and utilizing the Environmental Unit (part of the Planning Section) to integrate specialists who have expertise in environmental response, can conduct an ecological risk assessment, and will provide advice to the Incident Commander on natural resources at risk and the window of opportunity for response.

## **Scenario**

It is a sunny, breezy afternoon on March 15, 2005, at the Pacific entrance of the Canal, Republic of Panama. Relative humidity is at approximately 73 percent. The wind is coming from the north-northwest at approximately six knots.

The M/V ARCAICA is a container vessel, going southbound, schedule S06, with a length of 964.67 ft, beam of 106.00 ft, draft 38/09 Tropical Fresh Water (TFW) even keel. She has a Liberian flag.

Bunker barge SOFÍA, a self-propelled barge, with a draft 21/06 TFWFWD and 22/00 TFWAFT, is being loaded at Pier 6, Balboa with Intermediate Fuel Oil (IFO) 380. She has a 55 ft beam and is a 391 ft length barge with an approximate capacity of 655,000 barrels. After finished operations, she carries 45,000 barrels of IFO 380 and 5,000 barrels of marine gas oil (MGO) onboard. The captain of the bunker barge is waiting for the Panama Canal Pilot to get onboard to depart for routine bunkering operations at Balboa Explosive Anchorage.

After leaving the east lane of Miraflores Locks at 14:15 hours, M/V ARCAICA passes through the navigational channel in front of Pier 1 at Rodman. Due to a blackout onboard the M/V ARCAICA, her crew loses control over the navigational equipment. The chief engineer tries to establish contact with the master, while the M/V ARCAICA takes a strong sheer to port, but he is unable to establish communication with any crew member on the bridge. The crew is unable to stop the M/V ARCAICA, now cruising at eight knots, and at approximately 15:00 hours, the M/V ARCAICA collides with the port side of bunker barge SOFÍA. The bunker barge is completely jammed against the pier, resulting in her near destruction. Additionally, three containers from the M/V ARCAICA fell and sank in the vicinity of the accident.

At 15:05 a tugboat is sent to assist M/V ARCAICA. The tug's Captain reports to Marine Traffic Control that there is a significant oil spill coming from the bunker barge. At least eight out of 12 tanks of the bunker barge have collapsed, releasing their entire contents, approximately 32,000 barrels of oil. The barge has lost stability and has started to sink. There is a continuous release of oil appearing on the water surface. The pilot on board M/V ARCAICA reports a large oil spill obstructing the navigational channel.

At 15:45 hours bunker barge SOFÍA sinks at Pier 6. At this point, there is uncertainty on the amount of oil being continuously released out of the original 50,000 barrels on board before the collision. Only five out of the 10 crewmembers on the barge were able to escape in relatively good condition; there are two with life threatening injuries, and three are missing.

Met & Hyd's web page reports a current tide of 0.8 feet at 13:18 hours and an expected tide of 15 feet at 19:33 hours.

### **Notification Exercise**

The notification exercise was conducted on the afternoon of Day One of the exercise. To simulate a notification to the NRC and conference call with the NRT Executive Director and members of the TAT, NRT member agency representatives moved to a separate room within the training complex, while ACP participants discussed their initial response actions, personnel and resources needs, and resources at risk within the Canal Area. Personnel on scene included representatives from the fire department, Spill Response Operations Division, Division of Canal Protection, and ACP police. Key actions identified by exercise participants to be taken by ACP included:

- **Establishing ICS**
- **Deploying boom**—Locations of Boom Placement:
  - Place first boom near where the barge has sunk—1500 feet of 36” boom from Atlas and 1500 feet from Miraflores Lock SE
  - Place another 1500 feet of boom stretched across the channel south of the Bridge of the Americas
- **Search and Rescue Operations**—Divers will be in the area on-scene looking for the missing crew members, but divers will not enter oil-contaminated water (unless those missing are swimming or floating)
- **Vessel Movement**—M/V ARCAICA moved to Dock 15 using tug boats
- **Other Actions**
  - Stop all vessel traffic in the Canal at 16:00 hours
  - Contact outside authorities, both within Panama and internationally
    - Consejo de Seguridad/NRT
  - Contact stakeholders
  - Dispatch local police to control public at key areas, including the Bridge of the Americas and the Causeway
  - Publish a press release
  - Contact Oil Pollution Control (OPC) and other contractors to provide assistance

ACP made the decision that assistance would be needed from the TAT; therefore, an NRC incident notification form was submitted via the Internet, and ACP received a phone call from the NRC approximately five minutes later confirming receipt of the form and notification of the NRT Executive Director.

Subsequently, a phone call was made to the NRT TAT to discuss the incident and request technical advice and resource assistance, including protection of environmentally sensitive areas on the coastline and the need for dispersants and other equipment. USCG was designated NRT Chair for purposes of the response, in accordance with the language in the MOA. EPA served as Vice Chair to assist in contacting other NRT agencies for support.

The following technical assistance and resources were requested by ACP and will be provided by the TAT:

- Clean Caribbean Cooperative's (CCC) Aviation Dispersant Delivery System (ADDS) on a USCG C-130; USCG GST will travel to Ft. Lauderdale to pick up the ADDS and travel to Panama with the C-130. USCG also suggested that in-line dispersant devices could be used, in addition to, or in place of ADDS.
- USCG GST pledged to provide capability and training for shoreline assessment; GST recommended that the National Oceanic and Atmospheric Administration (NOAA) and GST conduct shoreline assessment cooperatively to ensure use of the best response methodologies in environmentally sensitive areas. The NRT TAT noted their understanding of the policy of not using dispersants inside the Canal in areas where depth is less than 20 meters. Consultation with Panama's National Authority on the Environment (ANAM) and the Panama Maritime Authority (AMP) will be necessary to determine restrictions on use of dispersants outside of the Canal.
- Night-vision overflight assessment was requested by ACP in order to view the oil trajectory after nightfall.
- Additional skimmers, in addition to storage capacity and transfer pump capabilities, were requested for assistance with oil recovery in shallow areas.
- Technical assistance and professional divers were requested from Navy SUPSALV for contaminated water diving and salvage work on the sunken barge; SUPSALV promised to pursue the contractual options for such support and provide information and options to ACP.
- GST noted they would mobilize personnel and resources and send an Advance Team to Panama. They also reported they would activate their agreement with CCC to get the dispersant load, Vessel of Opportunity Skimming System (VOSS), and temporary storage capability deployed.
  - Upon the suggestion from GST, ACP planned to begin working with their contractors to identify barges for loading recovered oil. Additionally, ACP was requested to provide 42' to 48' flatbed trailers, forklifts, and payload trailers.
- Because of special concern over the Smithsonian Tropical Reserve Area and a request by ACP for fishery expertise, the TAT pledged to coordinate with the U.S. Fish and Wildlife Service (USFWS) for support.

### *Logistics*

- GST noted they would provide a list of equipment they planned to bring to Panama and a cost estimate for the Incident Specific Agreement (ISA), as electronic transfer of funds must be agreed to and completed prior to deployment of U.S. Government personnel.
- Timeframe—The Advance Team, composed of representatives from GST, NOAA, SUPSALV, and EPA noted they would arrive in Panama by the following morning to provide technical assistance. Most equipment would be transported on the USCG C-130 and should arrive by noon or early afternoon of the following day.
- Equipment should be airlifted to Albrook Airport, which is located adjacent to the Balboa port.

- ACP Incident Command Post (ICP) contact information was provided to GST.
- ACP promised to work with the U.S. Embassy in Panama to expedite country clearances, and to facilitate arrival of people and equipment, including accommodations.

### **Facilitated Exercise Play**

Day Two began with an Incident Brief and Initial Unified Command/Incident Commander Objectives meeting. Players were briefed on the current status of the incident and all actions that had taken place up to the present time, including locations of boom placement.

Following the Incident Brief, the Incident Commander worked with the ICS section chiefs to establish the organizational structure, determine the operational period, and identify priorities.

*(The organizational structure is demonstrated in Appendix D: IAP Annex.)* The operational period was established as 0900 hours March 16, 2005 through 0900 hours March 17, 2005.

### **Priorities for the Operational Period**

The following priorities and the corresponding ICS section or ACP division responsible for implementing these priorities were identified during the Incident Commander Objectives Meeting:

- Reopen Canal vessel traffic at the earliest opportunity. *(Planning)*
- Minimize risks and control hazards to public and responders. Prepare and distribute safety plan. *(ACP Emergency and Contingency Management Division)*
- Commence T/B SOFIA salvage assessment and operations for marine casualty. *(Operations)*
- Minimize additional discharge of oil and aggressively recover oil. *(Operations)*
- Conduct dispersant application operations. *(Operations/Planning)*
- Engage stakeholders and public through proactive use of liaison/Information Officers. Keep Joint Information Center (JIC)/liaison information management flow current. *(Communications)*

Specific stakeholders include:

- Ports (Balboa, Rodman, Brazwell, etc.)
- National Security Center
- Yacht clubs (Balboa, Flamenco)
- Smithsonian Tropical Reserve Area
- Islands (Taboga, Taboguilla)
- AMP
- National Maritime Service (SMN)
- Minimize environmental damage. Prioritize protection strategies for resources at risk. *(Operations/Planning)*
- Effectively track evolving situation and resources. *(Planning)*
- Establish effective communications plan. Distribute communications plan to all responders. *(Communications)*

- Effectively integrate NRT personnel and equipment into ACP ICS. (*Logistics*)

During the Command and General Staff meeting, the Safety Officer and the Planning, Operations, and Logistics section chiefs each provided a report-out on their objectives, ongoing and future activities, and task assignments. This included such items as requiring use of personal protective equipment by all responders and tasking the local police to maintain security around the perimeter of the incident; coordinating dispersant and boom deployment; integrating the TAT into the Incident Command; and maintaining skimming operations. Additionally, the TAT reported that the NRT Chair and Vice Chair would be working with the State Department in Washington, D.C. and the American Embassy in Panama to facilitate resource flow and country clearance approvals.

Following the Command and General Staff meeting, a Tactics meeting was held, during which the operational planning worksheet (ICS form 215) was completed through discussion of the strategy and tactics for the next operational period. The form denoted the necessary resources for each tactical objective, which are listed below by objective:

***Tactical Objectives and Resources Needed***

- *Salvage*  
Needs: Develop Salvage Plan and conduct assessment  
Goals: Plan development underway by Naval Architect. Commence lightering and acquire commercial divers. If ACP divers are used, SOPs and safety information for lightering must be developed.  
Resources: Contaminated water divers, salvage tug, salvage barge, heavy lifting equipment, naval architect, salver
- *Open Canal* (Responsible Division: Marine Traffic Control scheduling)  
Goal: Open within 48 hours after use of dispersants and on-water recovery
- *Dispersants*  
Needs: Disperse on-water oil at Canal's Pacific entrance  
Resources: C-130 and spotter aircraft (with a NOAA Scientific Support Coordinator (SSC) in spotter) (alternately can use in-line inductors on boats to spray dispersants), ADDS, dispersants, SMART monitoring, extra aircraft to carry dispersants
- *Oil Recovery*  
Needs: Local list of available resources  
Resources: With an effective daily rate of 12,800 barrels, need to have approximately 5400 feet of boom in place; temporary storage capability; and equipment to skim, recover, and store oil, including the following:
  - U.S. Navy—2 skimmers, 4 boats, and additional storage capacity;
  - GST—VOSS; and
  - Vessel for VOSS.
- *Protection Strategies*  
Goal: Prioritize resources at risk  
Resources: Four shoreline protection teams, additional boom
- *Staging Dock and Area*

- *Decontamination of Vessels*  
Goals: Decontaminate northbound, requiring setup of vessel decon system and procedures.  
Needs: System to clean vessels transiting out of the Canal (ACP will request assistance from OPC and other local contractors, including Talleres). ACP has the equipment but would need contractor assistance in establishing a system and providing staffing.
- *Disposal*  
Goal: Prepare waste oil disposal plan.

Following the tactics meeting and completion of the operational planning worksheet, a planning meeting was held to refine the incident objectives, strategies, and tactics, and identify resource needs for the next operational period. A situation briefing was provided by the Operations Section Chief, detailing the location and resources needed for the five oil recovery stations and other necessary resources.

A mock press conference was held at 13:30 hours to test the media relations and crisis communications capabilities of ACP. The Incident Commander, Public Information Officer, and the manager of ACP's Emergency and Contingency Planning Division answered questions from the role players simulating the press.

The written IAP was prepared by the ICS Section Chiefs and officers and was approved and signed off by the Incident Commander. (*See Appendix D for the full IAP documentation.*)

### **Special Topic Briefings**

#### *Oil Pollution Response: Capabilities and Future Outlook in the Panama Canal*

With the advent of the PCSOPEP, new emergency response depots and facilities with launches and boom recovery equipment are in place or are being established with resource ordering underway. The following resources are available for oil spill response:

- Emergency response containers and depots at locks;
- Dredging and skimming equipment in the northern, central, and southern parts of the Canal;
- Work boats, utility vessels with front loaders, and a floating field operation center (training vessel) with equipment stored onboard;
- 54,000 feet of boom to be distributed along Canal in the new depots;
- Effective daily recovery capacity is 12,821 barrels; and
- Temporary storage using tanks and foldable tanks with 8,708 barrels of total temporary storage capacity.

ACP has established classification requirements for certain criteria, including resource location, resource status, response time, protection boom, containment boom, shallow water capability, and special equipment needs. (*See Table 1 for Equipment Classification information.*) The four tiers of classification include: Tier S, Tier 1, Tier 2, and Tier 3. ACP's goal is to have a sufficient level of equipment to be able to respond to a Tier 2

incident. For a Tier 3 incident response, ACP will require assistance from the NRT, and may also tap into the CCC, in addition to the standing cooperative agreements held by the Panamanian government.

An initiative has been underway in Panama to aggressively initiate development of national contingency planning, which would link to regional contingency planning. In order to meet the requirements of the PCSOPEP, training development (to improve response time and ensure responder health and safety) and conduct, and ordering of new response equipment is currently underway. Gaps do exist in ACP’s response capability in three areas, which include: temporary storage, skimming capacity, and oil disposal. However, these gaps are being addressed logistically through contractual agreements, private corporate support, and new equipment acquisition.

**Table 1: Equipment Classification**

Criteria	Tier S	Tier 1	Tier 2	Tier 3
a. Resource Location	All resources placed on-site	All resources placed on-site	All resources located nationally	May be located internationally
b. Response Time	Not to exceed 6 hours	Not to exceed 6 hours	Not to exceed 12 hours	Not to exceed 72 hours
c. Protection Boom	3,000 feet	10,000 feet	25,000 feet	30,000 feet
d. Containment Boom	1,000 feet	1,000 feet plus 300 feet per skimming system	1,000 feet plus 300 feet per skimming system	1,000 feet plus 300 feet per skimming system
e. EDRC (Bbls/day)	2,000	5,000	20,000	50,000
f. TSC (Bbls)	4,000	10,000	40,000	100,000
g. Shallow Water Capability	For 25% of resources	For 25% of resources	For 25% of resources	For 25% of resources

*Security Coverage for Hazardous Cargo, Security Details, and Security Contingencies*  
 Law enforcement, defense, and security are all important aspects of Canal protection. Article 310 of the political constitution of the Republic of Panama and national organic law include important considerations regarding the security of the Canal. There are multiple types of security coverage, including:

- Daily and regular transits;
- High value transits (HVT), i.e., for nuclear submarines, with Coast Guard, air surveillance, and SWAT teams on standby;
- High interest transits (HIT);
- Special operations; and

- Emergencies/industrial coverage.

Security in the Canal is based on a strategy to deter, delay, detect, and detain through a fully linked system approach, including intelligence, assessment, response, apprehension, and arrest. The security process is rooted in a proper balance between technology and human resources focused on the following:

- Recruitment standards and evaluations;
- Security, through physical barriers, fence alarms, closed circuit television (CCTV) cameras, entry/exit controls, roving guards, and remote monitoring for the Security Control Center;
- Network video servers for remote monitoring through the Internet so that responders can log onto a protected website to assess the emergency and initial response; and
- Coordination with Panamanian public forces for protection of Canal.

A Maritime Emergency Reaction Plan can be implemented during maritime emergencies, with assistance from the Panamanian National Police in controlling access roads surrounding the emergency site.

#### *U.S. EPA Capabilities*

EPA has a great deal of assets and resource capabilities, especially through the Environmental Response Team (ERT), the agency's "special response team" with over 45 scientists, engineers, and experts in environmental emergencies who provide on-scene assistance in managing environmental disasters. Specific capabilities include air monitoring; modeling; analytical, biological and ecological assessment; health and safety; and oil spill response. Equipment caches encompass Level A suits, Self Contained Breathing Apparatus (SCBAs), a portable weather station, radiation instrumentation, chemical agent detectors, and vapor analyzers, etc. ERT also has laboratory capability, and equipment storage, maintenance, and calibration ability, in addition to mobile labs. Over 20 training programs have been developed and are offered by ERT both internally and externally.

#### **Hotwash**

A "plus/delta" hotwash was conducted to identify the exercise successes and recommendations for improvement. The hotwash allowed all participants to share feedback on the positive aspects of the exercise and those aspects where corrective action is needed in enhancing response operations.

## **Exercise Evaluation**

### **Evaluation Process**

The exercise was designed to provide participants with an opportunity to assess current capabilities to perform the critical tasks required to respond to a major (Tier 3) emergency in the Canal Area. Through assessment of those capabilities, participants identified strengths, weaknesses, and future training needs.

Evaluators were present at the exercise location to observe and record exercise events, including player actions. Members of the evaluation team, from both NRT and ACP, completed exercise evaluation forms based on specific criteria established for each of the three key exercise objectives. Following completion of the facilitated exercise play, evaluators held a meeting to discuss and collaborate on their personal observations and recommendations, which fed into development of a briefing that was presented prior to the hotwash on the third day. Their findings are discussed in *Appendix E* per objective and each evaluation criteria.

A hotwash was conducted after the evaluation team presentation to help capture observations and opinions from players and identify issues and gaps in the response to the simulated oil spill. In addition, all participants were provided with exercise evaluation forms to record their observations of the exercise. The results of the hotwash discussion and evaluation forms are documented below, focusing on the strengths and recommendations resulting from the exercise.

In keeping with the no-fault nature of this exercise, the evaluation in this report examines the plans, procedures, and response systems used. Evaluator observations focus primarily on overall unit actions and the interaction between response units rather than on individual players.

Lessons learned from the exercise will improve coordination between the ACP and NRT, in addition to all parties' preparedness and planning efforts, and will lead to further discussion and training relevant to recognized capabilities and identification of issues.

## **Exercise Strengths**

### *Revitalization of ACP and NRT Coordination*

The preparation and bi-monthly coordination in advance of the exercise, in addition to the exercise planning meeting held in Panama in December 2004 and execution of the Balboa Reach Impact exercise facilitated revitalization of the coordination and communications processes between ACP and NRT stakeholders. The energy and commitment channeled into this partnership ensured the implementation of a successful exercise. ACP and NRT participants were reminded of the significance of collaboration to protect the Canal, including: its value to international trade and commerce; interest in ensuring its safe unencumbered operation; the need to safeguard against environmental degradation therein; and the importance of the health and safety of citizens in the Republic of Panama.

### *Recognition of the Technical Capabilities of ACP and NRT*

Through special topic briefings and execution of actual exercise play, a heightened sense of the capabilities and resources at the command of ACP and NRT responders was realized. Environmental expertise and rigorous security wherewithal within the ACP, in addition to the robust and professional leadership exhibited in command of the incident highlighted the extent of professional management and technical capacity at all levels of operations. Furthermore, the briefings provided by EPA's ERT and USCG GST, as well as illustration of the capabilities and equipment resources of Navy SUPSALV during the notification exercise and TAT deployment discussions, expanded upon the awareness of and appreciation for each other's qualifications and capabilities.

### *Comprehensive Discussion*

Responders focused in-depth on issues that arose during the exercise. The structure and schedule of the exercise allowed for thorough and comprehensive discussion of response priorities, activities, and review and consideration of alternative solutions for strategy and placement of oil spill response equipment.

### *Significant Increase in Understanding of ICS and the Planning Process*

Facilitation of the exercise using ICS was very valuable for the players, demonstrating the step-by-step process of response, with a particular structure for moving from one task to the next. ICS was a very useful method for organization of ideas, focusing of actions, distribution of tasks, and integrating of responders under one common objective. Using this type of system provided a clear picture of what needed to be executed within the ICS structure and each section specifically, and what needed to be projected for future operational period planning.

Moreover, provision of ICS and lessons learned training by USCG GST, the organization that will be providing response assistance to ACP during a major incident, was constructive and valuable for participants on both sides of the training. The instructor reaped the rewards of learning from past incidents in the Canal, while training participants realized and appreciated the best response practices ascertained by USCG

responders through years of response to major oil spills, hazardous materials releases and other incidents in U.S. and international waters.

*Enhanced Appreciation for the Dynamic Panama Canal Area Contingency Plan*

The recently completed Contingency Plan is very user-friendly and contains accessible resources including point-of-contact information, lists of equipment, forms, checklists, appropriate response actions for certain scenarios, among other things. Data access and utilization, through the Contingency Plan, was efficient and indispensable to the responding authorities. Exercise participants developed an appreciation for the capabilities of and wealth of information contained within the Contingency Plan. Additionally, primary NRT response personnel gained an appreciation for the complexity and concerns of the Canal and the ACP.

*Teambuilding Fostered*

All participants involved in the exercise, from players to observers and evaluators, maintained a sense of solidarity throughout the exercise. Participants worked together as a team in a constructive and encouraging way to best respond to the scenario. This exercise in teambuilding will serve as a strong foundation for ACP and NRT coordination and collaboration in future actual responses.

*Commitment to Continue ACP/NRT Coordination*

At the conclusion of the exercise and hotwash, both the NRT Chair and the Administrator of the Canal renewed their commitment to ACP/NRT coordination, recognizing the obvious value-added that is facilitated by this partnership. Specifically, the NRT pledged to renew the ACP/NRT committee coordination and support, to consistently foster development of this international relationship and to bolster the liaison role that the committee plays in organizing preparedness and response support through NRT member agencies. The NRT also assured fulfillment of their agreement to advise the ACP of training programs available from U.S. agencies in planning for and responding to oil spills, hazardous substances releases and other types of incident response, in addition to assisting in making available such programs to the ACP.

## **Recommendations**

### *1.0 Media Relations and Risk Communication*

#### Observation

During the mock press conference, the Incident Commander and others were faced with difficult questions regarding the circumstances of the incident, from the possibility of terrorist activity causing the incident to the status of an ecological risk assessment of environmentally sensitive areas and integration of specialists and volunteer organizations to advise on natural resources at risk and the window of opportunity for response.

#### Recommendations

Feedback provided by observers and evaluators present during the press conference focused on the following recommendations:

- Express compassion.
- Personalize the situation to the extent possible.
- Discuss and illustrate the solution (equipment, resources, and responders) instead of the problem (oil trajectory, crash site, oil on water).
- Be prepared for more socially-focused questions.
- Exercise caution in responses regarding re-opening of the Canal. It was suggested that ACP not provide the media a specific number of days/hours by which the Canal will be reopened.
- ACP may be expected to facilitate economic recovery and can do so by hiring local people (fishermen, etc.) to assist with the response. Resources offered by locals and non-profit organizations should be seriously taken into consideration as additional responder assistance.
- Take notes while questions are being asked and “buy some time” while considering your answer; keep answers short.
- Multiple ACP personnel should be available to answer media questions, as related to their experience and role in the exercise. Certain questions should be automatically deferred to subject matter expert (SME) personnel other than the Incident Commander.

#### Potential Action Items

Media relations training would be valuable for ACP to ensure that during a real incident, they are prepared to respond to the media. Conducting regular mock press conferences for a number of possible scenarios may be useful.

Training can be provided on risk communication and use of a Joint Information Center (JIC) during a response. The JIC, a facility established to coordinate all incident-related public information activities, serves as the central point of contact for all news media at the scene of the incident. Here, public information officials from all participating agencies can collocate.

2.0 *GIS Capable Response Plan*

Observation

There is not a fully accessible geographic response plan developed that accounts for environmentally sensitive areas.

Recommendation

Such a plan would be helpful to responders, particularly to the Environmental Unit as part of the Planning Section, to more effectively and efficiently prioritize use of oil response equipment and facilitate decisions of tradeoffs (e.g., dispersing oil or capturing and burning it near environmentally sensitive areas). The plan would also aid in execution of an ecological risk assessment for advising the Incident Commander on natural resources at risk and the window of opportunity for response.

Potential Action Items

ACP may choose to use the recently developed environmental sensitivity index (ESI) map, a resource within the Contingency Plan, to develop a geographic response plan relative to environmentally sensitive areas. Other geographic response strategies (protection priorities, booming strategies, staging areas, natural collection areas, and equipment locations) should be developed. Furthermore, an Ecological Risk Assessment course was recommended as a valuable one in order to better plan and prepare for environmental issues related to major events.

3.0 *Personnel Shifts*

Observation

There is no established plan for relief/rotation of personnel from one shift to the next, nor are there established recall measures, which would be necessary in responding to a major incident.

Recommendation

While it may be difficult to create a staffing plan in advance of an incident because firm schedules are not necessarily known months ahead of time, a scheduling template could be created among and within the multiple response divisions within ACP to determine the capabilities of responders and identify who can fill specific response roles during a major incident that requires long-term response and recovery.

ACP may choose to establish emergency notification procedures for first responders. During the exercise, the collision happened 30 minutes before the crew of the ATLAS left for the day. There is uncertainty as to what would have happened if the collision happened 30 minutes after the crew had left for the day. Establishing recall measures (cell phones, pagers, phone trees, etc.) would ensure the quickest response time no matter the time of the incident.

4.0 *Finance*

Observation

Financial issues can change the dynamics of a response because of costs for equipment and resources. It is important to discuss financial considerations during exercises such as this one. USCG GST noted that in an actual incident, they would have immediately prepared costs based on ACP requests for assistance so that ACP could determine exactly what they needed based on the funding available to them. For example, ACP requested application of dispersants using the C-130, which is very expensive. Alternatively, ACP could stockpile dispersants in-country and use local resources, such as tugs and crop dusters to apply dispersants.

ACP must contract directly for services outside the United States' government's suite of services. For example, contaminated water diving services must be contracted. Additionally, ADDS and associated dispersants must be obtained from CCC.

There are standard rates for each piece of equipment. For example, with an hourly rate of \$11,000, equipment transport and dispersant delivery missions will likely exceed \$1M in aircraft use alone. It should be noted that all U.S. equipment must be operated and maintained by U.S. responders. Furthermore, all U.S. government equipment must be returned to the U.S. after use. *(See Appendix C for a full summary of the resources and equipment list requested and provided by the TAT.)*

All personnel are charged at an hourly rate. This cost is in addition to travel and per diem expenses. For example, the hourly rate for a USCG O4 is about \$80. Any deviation for standard cost accounting methods should be negotiated in advance. It is important to note that standard rates for equipment include the cost of the personnel to operate them.

Recommendation #1

A pre-established system is needed to facilitate efficient coordination. Such a system would allow ACP to immediately decide which resources should and could (based on cost consideration) be requested and deployed. According to the MOA and ISAs, ACP is required to provide funds immediately, in advance of deployment, through electronic transfer. There is uncertainty regarding the appropriate payment mechanisms when working with U.S. contractors to the Navy (through SUPSALV) and USCG; additional clarity is needed.

Potential Action Items

Equipment lists and standard rates for manpower and resources should be provided by NRT member agencies. ACP may choose to conduct a meeting with its Finance Department to promote awareness of the fact that, as established in the ISA, funds must be moved quickly. For example, this requirement could necessitate a transfer of millions of dollars overnight.

Recommendation #2

There exists a need for a uniform system by which the ACP may wire funds to the responding agencies of the NRT during the early stages of response to a significant spill in the Canal Area. The 2002 MOA states that “all expenses associated with the provision of assistance by the TAT or any U.S. agency will be the responsibility of the ACP on an advance of funds basis.” The agreement also states that “the EPA, or the U.S. Coast Guard, and any other U.S. agency that intends to provide assistance to the ACP consistent with this Agreement, shall execute an Incident Specific Agreement with the ACP.” The United States Coast Guard has established and successfully used the Incident Specific Agreements for the past two evolutions with ACP.

Potential Action Items

The model ISA procedure set forth by the USCG should be adopted by the EPA, DoD, and any other agency that may be called upon to provide assistance to ACP. EPA and DoD should take active steps to institute a system of accepting funds from the ACP by means of an ISA. This also will require the coordination of the ACP.

5.0 *Stakeholder Integration*

Observation

In smaller-scale exercises, ACP has not had to take into account the many potential stakeholders who may be impacted by a major incident within the Canal Area. The impact on stakeholders must not be taken for granted. For example, in this exercise, if the oil spill impacted waters outside the jurisdiction of ACP, AMP would need to join the unified command.

Recommendation

ACP needs to focus on how to manage and integrate stakeholders into their planning and preparedness processes, and their response systems, should an incident of significance occur.

Potential Action Items

Pre-determine stakeholders and appropriate means of notification.

6.0 *Cross-boundary Issues*

Observation

There could be major potential cross-boundary and customs issues with bringing a TAT into Panama. The Republic of Panama needs to expedite country clearance requests. It should be noted that the U.S. Navy utilizes contract personnel and contract personnel will be required for contaminated water diving and salvage operations, which can further complicate country clearance request processes. Air crews and teams need to receive Customs waivers for entry to Panama and re-entry to United States. Local equipment offload and transport services need to be arranged and coordinated with Customs. U.S. responders need to be granted a liability waiver while responding in Panama.

Recommendation

ACP should coordinate with (and involve in future exercises) the Ministry of Foreign Affairs in the Republic of Panama and other Panamanian government agency representatives to discuss and resolve beforehand the possible issues that could arise with a TAT entering the country.

Potential Action Items

A thorough reference book could be created for the State Department to educate Embassy personnel in pre-scripting communications to the U.S. Ambassador to Panama and the Canal Administrator. This would help facilitate the flow of U.S. personnel and equipment into Panama.

The United States and the Republic of Panama may choose to establish a check list for country clearance for entry of personnel and equipment. This list could be completed to facilitate the expedited entry of response resources to assist during an emergency. The onus falls most heavily on ACP to work with their government to establish requirements.

7.0 *Expanded ACP and NRT Agency Involvement in Future Exercise*

Observation

Further exposure to ACP divisions (and NRT agencies) is necessary in future exercises. In addition to involvement by the emergency response and operations divisions, there should be full ACP representative involvement to build awareness, which will facilitate enhanced cooperation when an actual incident occurs. Exposure to such training within Panama for ACP representatives and other agencies will be very valuable if an incident should occur.

Recommendations

- Additional personnel should be trained in the ICS process (including implementing position-specific training).
- A certain level of awareness should be communicated during such trainings regarding the pressure of opening the Canal as soon as possible after an incident occurs.
- ACP should involve their legal department in future exercises so that decisions can be made based on authorities and regulations within the Republic of Panama.
- The team of technical specialists that developed this exercise should be included in ICS response structures in future incidents; their scientific backgrounds would be very valuable during an oil spill or hazardous materials release response.
- NOAA should be involved in future planning and exercising. Their SSCs are very valuable during a response, especially in providing ecological assessments. NOAA can provide Platform for Implicit Surfaces and Curves and the Exploration of Singularities (PISCES) modeling and has advanced 3-D trajectory modeling for dispersants.

- NRT should expand coordination among intergovernmental capabilities, including the Department of Energy, Department of Homeland Security, etc.

Potential Action Items

ACP may choose to hold more frequent exercises with the NRT, engaging full ACP representation for expanded involvement. The NRT should coordinate with DOE to inquire into the agency's capabilities for response in the Canal.

8.0 *Documentation*

Observation

Documentation of all decisions and planning, specific to time frames, is not executed to the extent necessary for a major event such as occurred with this scenario.

Recommendation

Specific personnel should be integrated into the ICS response structure to serve as part of the documentation unit. This is necessary for answering to the public, stakeholders, and authorities about why certain decisions were made and response actions taken during the urgency of the response. Additionally, After Action Reports (AARs) should be completed following each exercise and actual incident, so that issues and corrective actions can be tracked and improved upon in future incidents.

Potential Action Items

Ensure that a documentation unit is established in future incidents.

9.0 *Booming Strategies*

Observation

The best time to consider booming strategies is not during a crisis. The booming strategy, as drawn during the first day of the exercise, would allow the oil to escape to the Pacific anchorage area as the boom chevrons were drawn incorrectly.

Recommendation

Predetermining a booming strategy would greatly reduce the chance of such a future oversight. These strategies can be predetermined and even have "hard points" established for boom connection points. These predetermined strategies also will establish the most intelligent placement of limited boom and deployment vessels.

Potential Action Items

ACP's Spill Response Operations Division may choose to coordinate with the Emergency and Contingency Planning and the Transit Operations Division to develop pre-determined boom strategies in particularly sensitive areas of the Canal.

*10.0 Standardized Resource Tracking Methods*

Observation

There appeared to be no standardized resource tracking methods established by ACP.

Recommendation

If ACP chooses to fully adopt ICS, they can prepare resource cards based upon their current capabilities, prior to a major incident. These cards could be prepared as equipment is purchased and received, and should be updated as equipment is moved, expended, or out of service for repairs.

Potential Action Item

ACP could develop resource cards to serve as a standardized resource tracking system during a significant incident where multiple and varied types of resources and equipment are being used in the response. These cards would then provide instant resource capability and location information without having to prepare them during an emergency.

*11.0 Format of the Panama Canal Area Contingency Plan*

Observation

There are many benefits of establishing the Area Contingency Plan on the ACP Intranet; however, there are also drawbacks. First, there is no access to applicable sections of the Area Contingency Plan for response personnel in the field if they do not have a computer or access to the internet. Second, there is limited access to computers in the CAC.

Recommendation

Despite the onerous task of frequently updating a "hard copy," there are many benefits of being able to look at a printed version of a plan and quickly find a reference section, whether in the field or in an operations center. It is recommended that ATLAS and major equipment depots be supplied with at least one hard copy of the Contingency Plan.

Potential Action Item

ACP may want to consider compiling the valuable resources of their Contingency Plan into hard copy reference notebooks that can be provided to primary response personnel and stored at locations where access to the Intranet is limited. A bi-annual update of the hard copy reference notebooks could be implemented to ensure the documents and information are as current as possible.

## **Conclusion and Outcomes**

The ACP plans on using the 2002 ACP-NRT MOA to gain access to NRT resources during a significant oil, hazardous material, or radiological incident in the Canal. The United States recognizes the mutual goals of safe and uninterrupted Canal operation and pledges to facilitate the deployment of these resources at Panama's request. Building upon strengths reaffirmed by this successful exercise, the NRT-ACP working group will strive to enhance those areas where coordination can be improved. The NRT Chair assured the ACP that the NRT is dedicated to enhancing the ongoing committee structure and continuing in its agreement to provide technical assistance and resources.

The 2002 Agreement requires, at a minimum, one table top exercise be conducted annually to ensure continuity of communications, planning and operations. Since the signing of the agreement, the ACP and NRT have taken a stepwise approach, starting with a simple notification exercise in 2002 with the ultimate goal of performing a full scale exercise with equipment deployment in the future. The success of this training and table top exercise, including the refinement of logistic procedures, marks a significant step toward meeting the ultimate goal of seamless request for, mobilization, and provision of U.S. response resources to the Canal. Proposals were made for future exercises to encompass radiological or biological incidents as well as a VOSS demonstration and deployment.

In addition to future exercises, the ACP and NRT expressed their dedication to improving coordination by taking active steps through their planning and preparedness programs organically. The ACP continues to enhance its response capability and strives to gain the data and knowledge required to ensure the optimal utility of response resources and personnel. This will be accomplished through accelerated ICS and ESI training within Panama. Additionally, the NRT will work with its member agencies to provide the Republic of Panama with additional training, and will look to include ACP representatives in beneficial evolutions, such as the USCG's Spills of National Significance (SONS) exercises and the EPA's annual On Scene Coordinator (OSC) Readiness Training.

## Appendix A: Exercise Participants

Name	Office	Phone	
<b>PARTICIPANTS</b>			
Arcelio Hartley	ACP (MRT)	272-4212	
Diego Porras	ACP (MRTC)	272-4211	
On duty Canal Port Captain	ACP(MRTC-CP1)	272-4211	
Abraham Saied	ACP(MRTV)	272-4220	
Freddy Chen	ACP (MRTC-CH1)	272-4211	
Octavio Stagg	ACP (MRTC)	272-4191	
Gilberto Gasteazoro	ACP (ESMV)	276-6481	
José Maturell	ACP (ESMV)	276-6481	
District Commander	ACP(MRE)	276-8953	
Urho Gonzal	ACP(MRE)	276-4635	
Maricarmen Sarsanedas	ACP(AECN)	272-7602	
Deborah Dietrich	NRT Chair-EPA		
Dennisses Valdes	EPA		
Rich Buckingham	Navy Salvage		
Ronald Worthington	Navy Salvage		
LCDR James Elliot	GST		
NRC watch stander	NRC	202-267-2100	
<b>DESIGN TEAM</b>			
Diovine Francis	Director	ACP (MRE)	272-4635
Octavio E. D'Meza	MSEL	ACP (MRE)	272-4635
Rony Araúz	Resources	ACP (MRE)	272-4635
LCDR Mike Heisler	Coach	NSF(USCG)	
CWO Everet A. Soars	Resources	GST	
LT Paul Lattanzi	Role player	USCG	
Anna Parrott	Role player	SRA	
<b>NRT EVALUATORS</b>			
Capt. Rogelio Altafulla	ACP (HRTM)	272-8550	
Capt. William Diehl	ACP (ESXC-CG)	272-4061	
Mark Meza			
<b>OBSERVERS</b>			
Alfredo González	ACP (MRE)	272-4642	
Luis Alvarado	ACP (ESM)	276-2351	

## **Appendix B: Training Presentations**

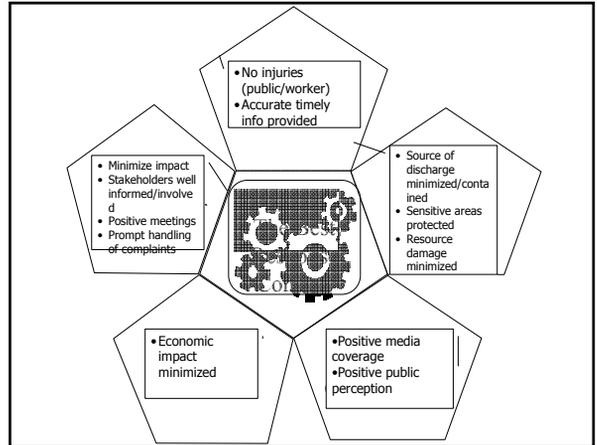
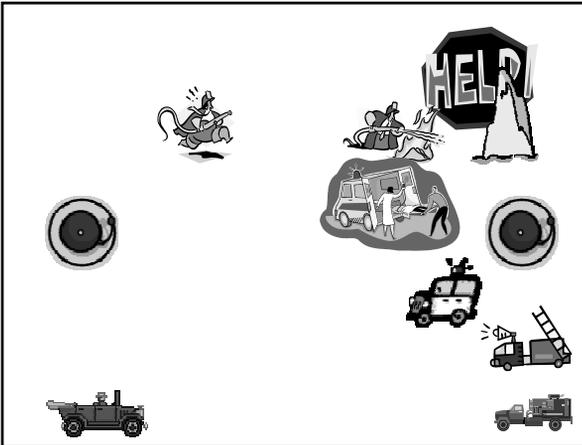
*Panama Canal Area Contingency Plan  
Incident Command System  
Incident Planning Process  
Best Response: Lessons Learned*

# Contingency Plan of the Panama Canal

## Purpose & Scope

Ascertain effective resolution of emergency situations at the Panama Canal arising from:

- Accidents
- Natural Events
- Sabotage, Terrorism



## The Panama Canal Contingency Plan

- Accesible via the intranet
- Allows easy access to information:
  - Resources, contacts, maps, forms, etc.
- Reduces maintainance efforts
- Provides quick and simple interface with support software



Panama Canal Authority  
Contingency Plan

Activation Criteria

EMERGENCY FLOWCHART

**Mass Casualty**  
**Oil Spills > 1000 gal**  
**Hazmat spill > 500 gal/lb**  
**Radioactive materials**  
**Uncontrolled ship fire**  
**\$100,000+ loss**  
**Adverse effect on Canal's image**

*Step by Step*

1. Incident Reporting
2. Notification Procedures
3. Size up and Evaluation by First Responders
4. Establishment of the Incident Management System
5. Development of Action Plans (Strategy)
6. Selection of Tactics
7. Determination of Resources needed
8. Implementation of Tactics
9. Evaluation of actions being carried out
10. Termination Procedures

(Back)

Panama Canal Authority  
Contingency Plan

Activation Criteria

EMERGENCY FLOWCHART

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FIELD OPERATION GUIDE  
 PLANNING CYCLE  
 FORMS  
 ABOUT THE PLAN  
 WHY CONTACT  
 GLOSSARY  
 INDEX

Panama Canal Authority  
Contingency Plan

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INITIAL STEPS  
 CONTACTS  
 INCIDENT COMMAND SYSTEM  
 ACTION PLAN  
 RESOURCES  
 GIS  
 ANNEXES

Panama Canal Authority  
Contingency Plan

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**Adverse effect on Canal's image**

**Types of Scenarios for the Initial Steps by the Maritime Traffic Control Center, Canal Port Captain, and Incident Commander**

- Maritime or in Coastal Facilities
- Radioactive Materials
- Land with Fire, Hazardous Materials, Hydrocarbons and Mass Casualty
- Airplane Crash
- Derailment Affecting ACP Areas
- Forecast or About to Happen Natural Disaster (Ex. Tsunami, Floods)
- Floods - Flood Manual - EIEH
- Natural Disaster that Already Happened (Ex. Earthquakes)
- Terrorism, Bomb Threats, and Sabotage

Panama Canal Authority  
Contingency Plan

Activation Criteria

EMERGENCY FLOWCHART

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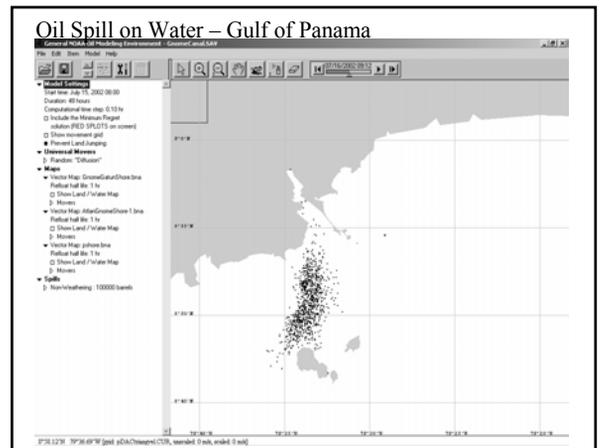
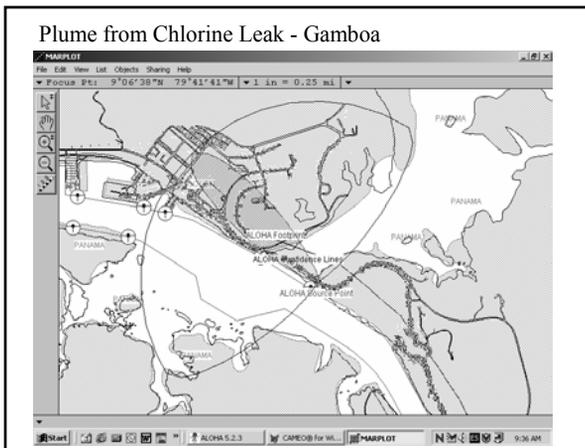
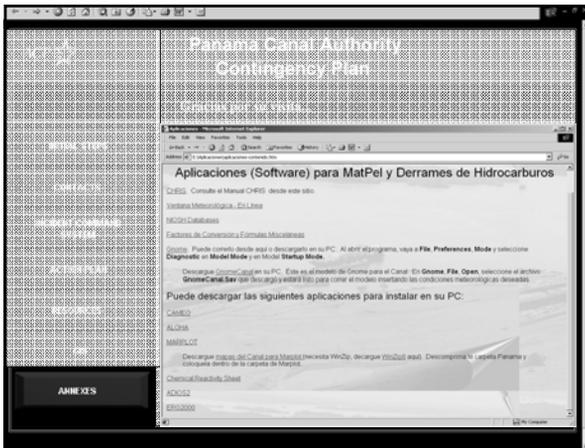
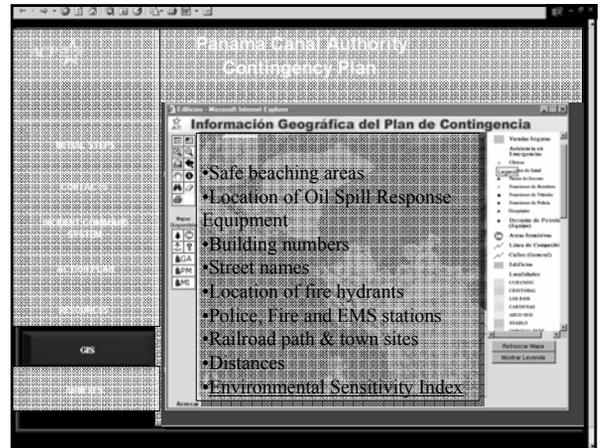
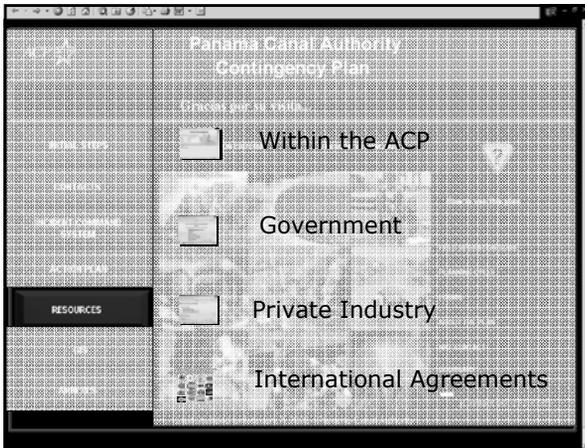
**Maritime or Coastal Installation Incident Initial Steps**

Marine Traffic Control Center Actions

Notifications	Actions
<input type="checkbox"/> Canal Port Captain	<input type="checkbox"/> Collect information (where, what, who, when). Find out how to contact the informant and keep him on the line.
<input type="checkbox"/> Emergency Dispatch Center (119)	<input type="checkbox"/> Alert vessels near the incident. Order endangered vessels to move away.
<input type="checkbox"/> Manager, Marine Traffic Control Unit MRTU	<input type="checkbox"/> Dispatch a motorboat to transport Emergency Division personnel (firefighters).
<input type="checkbox"/> Tugboat Section	<input type="checkbox"/> Send the nearest tugboat (preferably with foam). Send a second tugboat when available.
<input type="checkbox"/> Manager, Traffic Management and Admeasurement Section, MRTV	<input type="checkbox"/> Continue monitoring.

Remember to follow the additional steps if the Incident Involves:  
 Hazardous Materials, Hydrocarbon Spills, Fire, or Massive Medical Emergency.





## Features

- Geographical Information System
- Databases for phone numbers and resources
- Application software, chemical information databases, and on-line information

## In the Near Future...

- Continuous risk analysis
- Establishment of agreements
- Development of the business recovery phase
- Addition of an Environmental Sensitivity Index Map
- Validation and improvement of modeling software (NOAA Support)

## Legal Basis for Emergency Planning

- Agreement 10  
"Emergency Services"
- ✓ Article 3:  
ACP will maintain coordination mechanisms with other entities
- ✓ Article 8: Administrator has the authority for development and implementation of contingency plans



## Planning

- Risk analysis, brainstorming, and workshops
  - ❖ Within the Panama Canal
    - MRE, AECN, GC, MRT, ESMV, IMS, ESC, MRL, IPIH, SII, FMXR, HRH, ESSI
  - ❖ Outside the Canal
    - Civil Protection, Ministry of Health, Police, Social Security

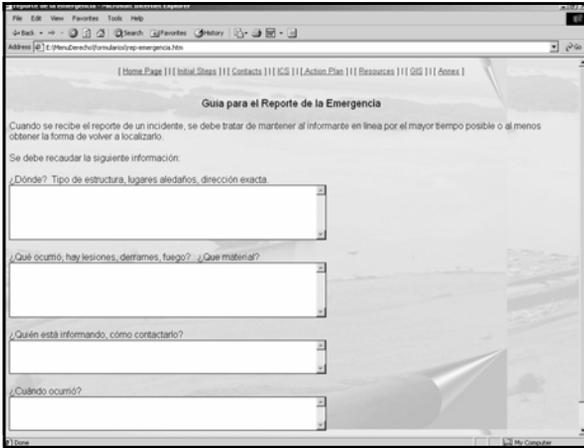


## Scenario

- Northbound barge laden with oil strikes the west bank as it approaches Gamboa. Reports suggest it is taking water and product is beginning to spill. It is estimated that 10000 bbls can be lost within the next three hours.

## Incident Reporting

- Report is received by the Marine Traffic Control Center.
  - The controller records the 5w's
    - What happened
    - Where it happened
    - When did it happened
    - Which equipment is involved
    - Who is reporting

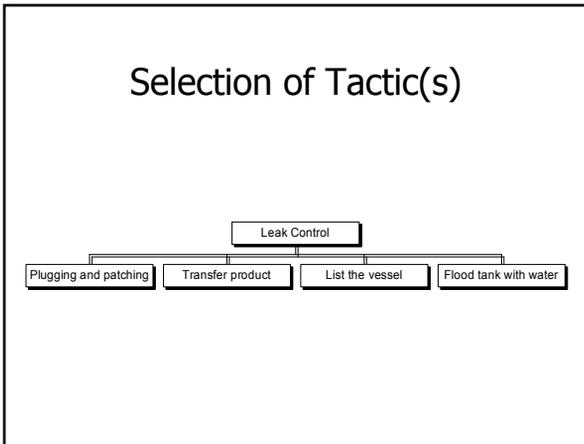
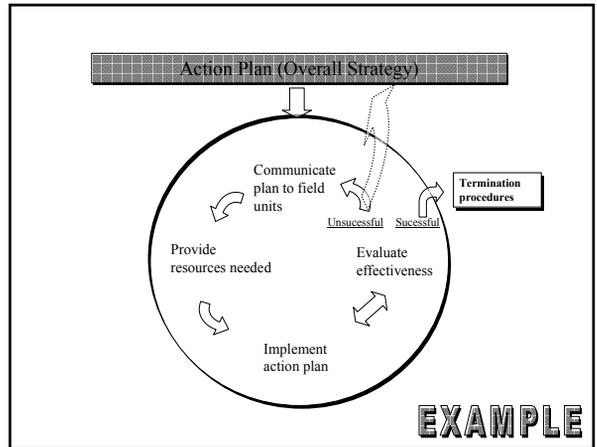


## Notification

- The controller initiates notification and undertakes actions based on the initial action list described in the plan.

## Incident Management System

- ❖ Modular Structure
- ❖ Roles and Responsibilities
- ❖ Lines of communications
- ❖ Span of control



## Development of action Plans

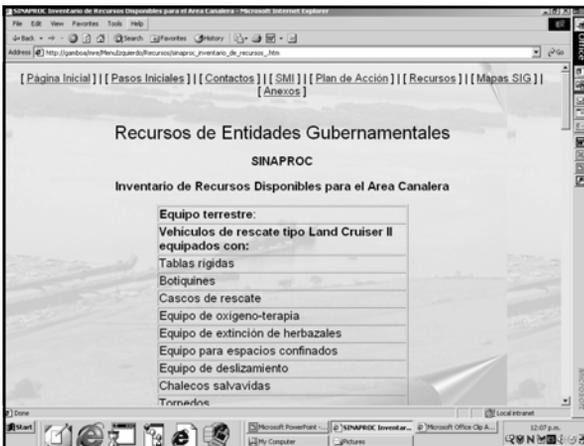
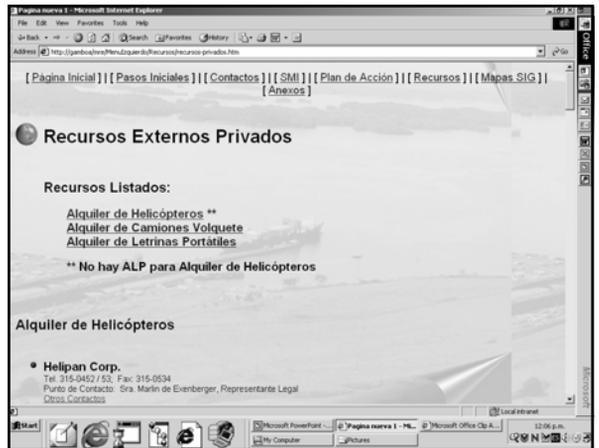
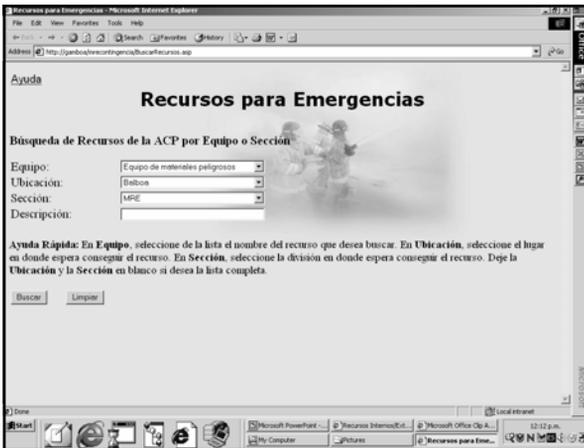
The action plan should be developed on the basis of an understanding of the situation, previous plans, and the availability of resources. The plan should include:

- ❑ **Response Objectives:** To define the priorities of the incident and the goals to be accomplished. Units on the scene shall not act unless their actions are aimed at achieving one of the objectives selected by the Incident Commander (IC), in coordination with the Chief of Operations of the Incident Command System (ICS).
- ❑ **Organization of The Incident Command System:** The (hierarchy) of the ICS shall be clearly defined for each specific incident, and the lines of supervision in the field shall be clearly established. All field units shall know who to report to.
- ❑ **Allocation of Resources:** Each field unit shall have a clear understanding of the resources it can use and those that are for the use of other units. The IC shall assess the costs and benefits of the resources to be used. The Operations Chief shall know the resources, their location in the field, and the units that use them.
- ❑ **Support Plans:** It is essential that the Safety Plan be included in the Action Plan. Furthermore, plans and annexes, such as communications with field units and relations with the media, shall be taken into consideration.



## Coordination of Resources

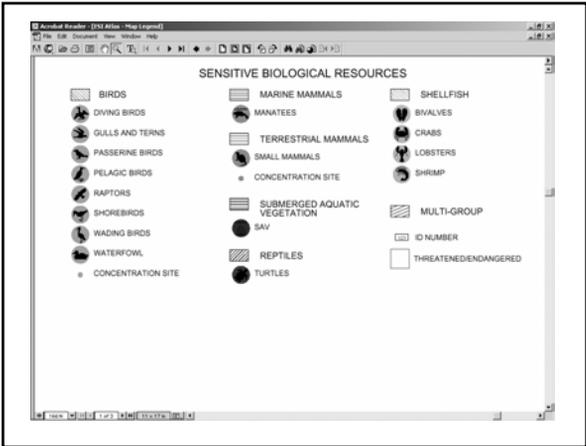
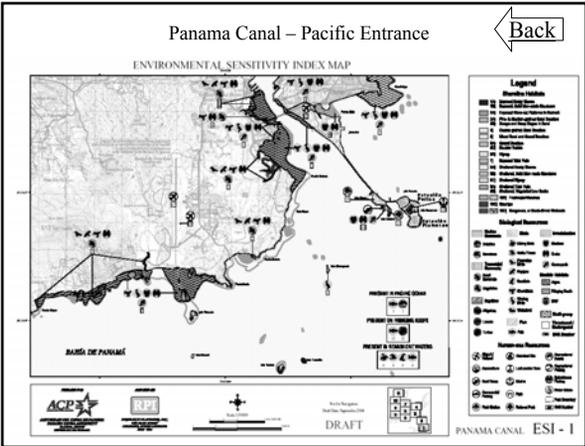
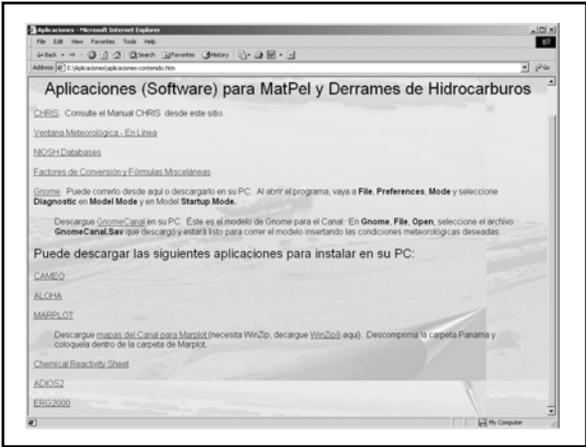
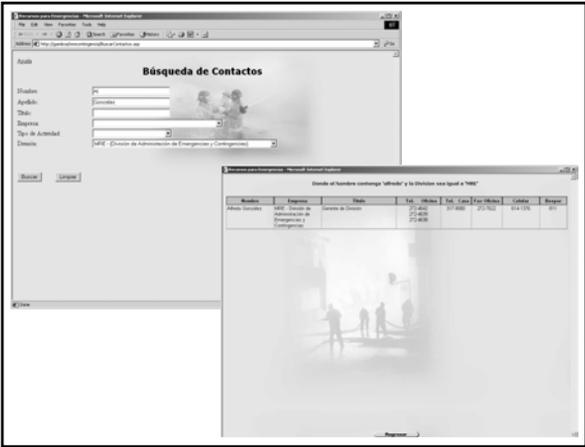
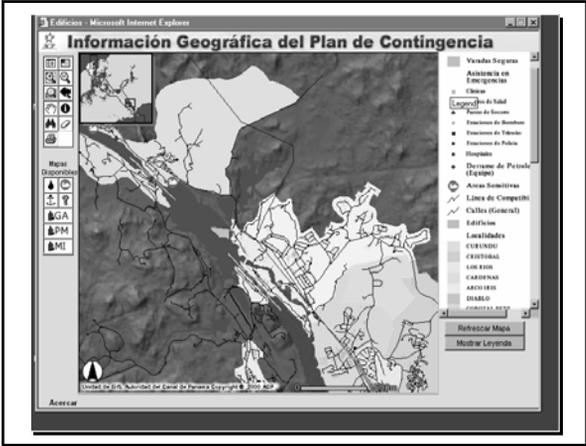
-  Within the ACP
-  Government
-  Private Industry
-  International Agreements

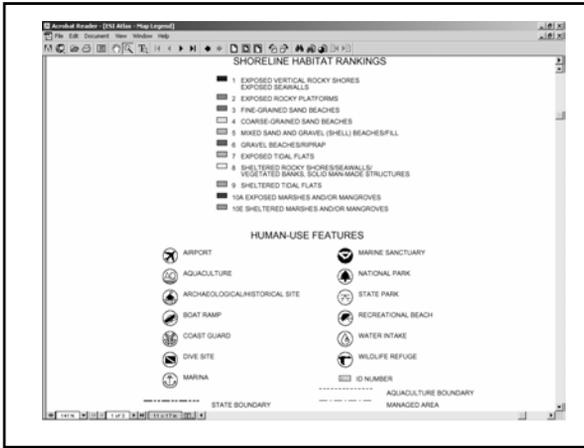


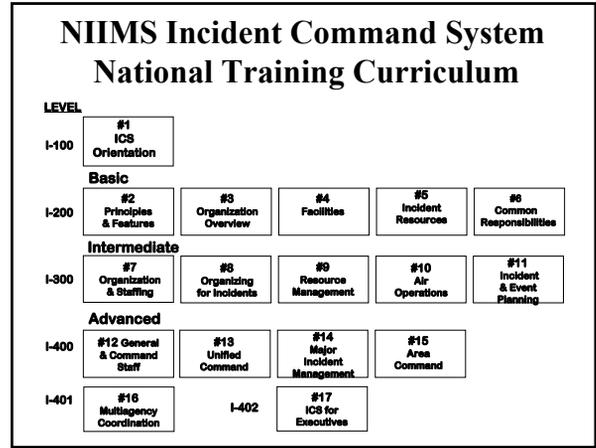
## Access via Memorandum Of Understanding

# Recovery and Termination

- Rehabilitation
- Interviews
- Lessons learned
- Investigations
- Records







## Principle Features of ICS

*Objectives of this module*

Describe and explain the use of:

- Primary Management Functions
- Management by Objectives
- Unity and Chain of Command
- Organizational Flexibility
- Span of Control
- Common Terminology

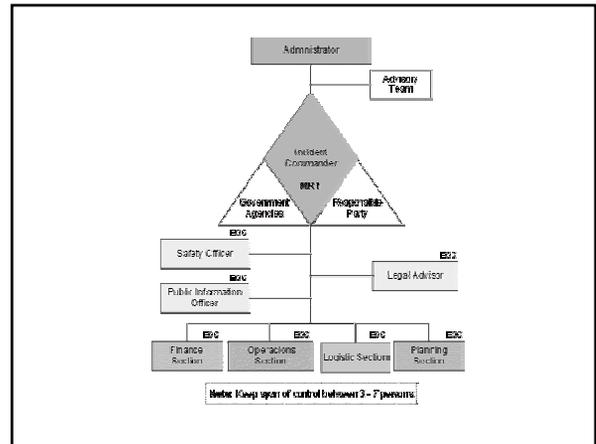
## Principle Features of ICS (cont.)

*Objectives of this module*

- Personnel Accountability
- Integrated Communications
- Resources Management
- The Incident Action Plan
- Unified Command

## Functional Responsibilities

Function	Responsibility
Command	= Overall responsibility
Operations	= Direct tactical action
Planning	= Manage planning process, maintain resource & situation status
Logistics	= Provide support
Finance/Administration	= Cost accounting & procurements

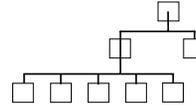


## Incident Management by Objectives



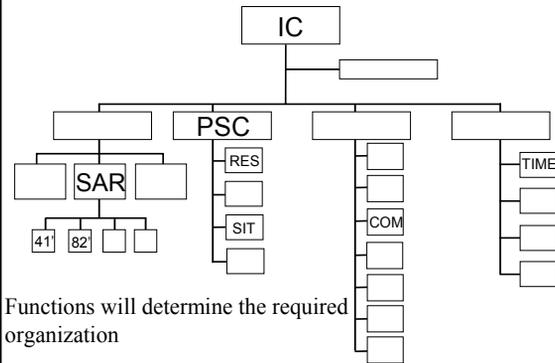
## Unity and Chain of Command

**Unity of Command** - Have a clear line of supervision



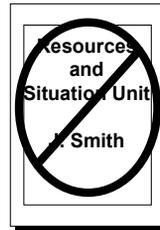
**Chain of Command** - Orderly ranking of management positions in line of authority

## ICS Organization Flexibility



Functions will determine the required organization

## Do Not Combine Organizational Elements



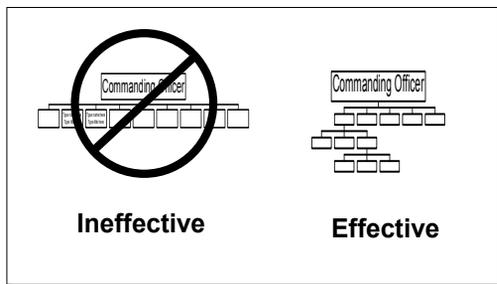
One person may supervise more than one unit.

Planning Section Chief

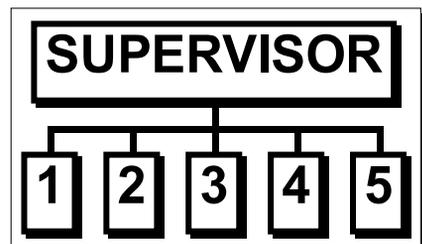
Resources Unit  
J. Smith

Situation Unit  
J. Smith

## Span of Control



Optimum Span of Control is  
*ONE TO FIVE*



## Not This

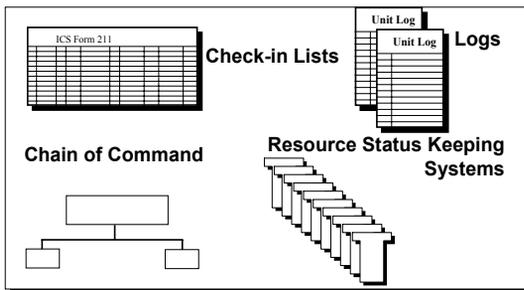


## In ICS, Common Terminology is Applied to:

- Organizational Elements
- Position Titles
- Resources
- Facilities



## Personnel Accountability is maintained through the use of:



## ICS Integrated Communications

- COMMUNICATIONS SYSTEMS
- FREQUENCY AND RESOURCE USE PLANNING
- INFORMATION TRANSFER PROCEDURES



## Resource Management in ICS



**Single Resources**  
Includes personnel and equipment



**Task Forces**  
Combination of single resources



**Strike Team**  
Combination of same kind and type

## The Use of Task Forces and Strike Teams:

- Maximizes effective use of resources
- Reduces span of control
- Reduces communications traffic



## Resource Status Conditions in ICS



**Assigned**



**Available**



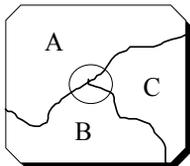
**Out of Service**

## Written Incident Action Plans are Usually Required When:

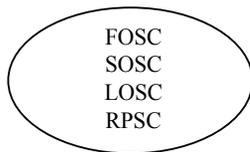
- Two or more jurisdictions
- Incident goes beyond one operational period
- Incident response organization expands
- Agency dictates



## Managing an Incident Using Unified Command



**Multi-jurisdictional  
Incident**



- A single, coordinated Incident Action Plan
- One ICS Organization
- One Incident Command Post

## To Be a Member on Unified Command You Must Have:

- Jurisdictional authority
- Functional responsibility
- Must have resources to support response organization



## Objectives Review

- Primary Function
- Management by Objectives
- Unity and Chain of Command
- Establish command
- Organizational flexibility
- The Incident Action Plan
- Span of control
- Common Terminology
- Personnel Accountability
- Integrated communications
- Resources management
- Unified Command

## The Incident Planning Process

## Incident Planning

*Objectives covered in this module include:*

- ☞ Incident Action Plan developer responsibilities
- ☞ Major steps of the planning process
- ☞ Importance of the Operational Period in a planning cycle and how derived
- ☞ Development of objectives, strategies, tactics, and an IAP in an Exercise

April 02

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## Incident Planning (cont.)

*Objectives covered in this module include:*

- ☞ Explain the function of the Operational planning worksheet (ICS 215) and other forms which may be used in preparing an incident action plan (IAP)
- ☞ Explain the criteria when an IAP should be completed in writing
- ☞ Identify the kinds of supporting materials included in an IAP

April 02

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## PLANNING "P"



April 02

4

## Essential Steps in Event/Incident Action Planning

- ☞ Understand situation and agency constraints
- ☞ Determine operational period
- ☞ Establish incident objectives and strategy
- ☞ Develop tactics and assignments

April 02

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## Written Incident Action Plans are Usually Required When:

- ☞ Two or more jurisdictions
- ☞ Incident goes beyond one operational period
- ☞ Incident response organization expands
- ☞ Agency dictates
- ☞ IC requires it

April 02

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## Factors Affecting Length of Operational Period

- ☞ Length of time available / needed to achieve tactical objectives
- ☞ Availability of fresh resources
- ☞ Future involvement of additional jurisdictions and/or agencies
- ☞ Environmental Considerations (daylight, wx, etc.)
- ☞ Safety Considerations

April 02

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## Understand the Situation



April 02

8

## Establish Incident Objectives



April 02

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## Incident Objectives



- ☞ Communicate what you want to accomplish
- ☞ Objectives become the basis for all incident activities

April 02

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## Incident Objectives

- ☞ **ICS Objectives:**
  - **A**ttainable
  - **M**easurable
  - **F**lexible
- ☞ **“SMART”:**
  - **S**pecific
  - **M**easurable
  - **A**ction Oriented
  - **R**easonable
  - **T**ime-specific

April 02

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## ICS 202 Incident Objectives

- ☞ Incident name
- ☞ Date / time prepared
- ☞ Operational period
- ☞ Objectives
- ☞ Weather forecast
- ☞ Safety message
- ☞ Attachments

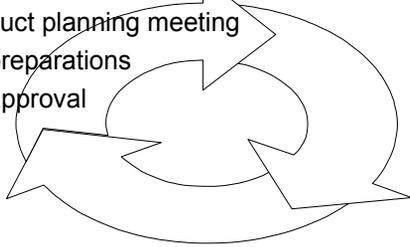


April 02

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## Incident Planning Cycle

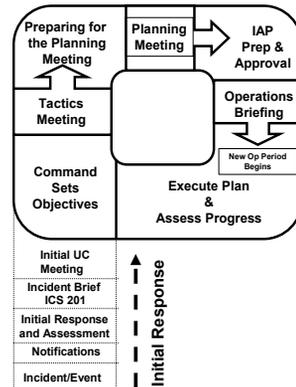
- ☞ Conduct tactics meeting
- ☞ Conduct planning meeting
- ☞ IAP preparations
- ☞ IAP approval



April 02

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## PLANNING "P"



April 02

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## Important Considerations for Effective Planning Meetings

- ☞ All participants must come prepared
- ☞ Strong leadership must be evident by the Planning Section Chief and other Section Chiefs
- ☞ Members of the UC must be able to commit resources
- ☞ Adhere to the meeting agenda
- ☞ No radios, cell phones, beepers, or interruptions

April 02

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## Planning Meeting Format and Topics

- |                          |               |
|--------------------------|---------------|
| ☞ Objectives             | IC or UC      |
| ☞ Situation              | PSC, SUL, RUL |
| ☞ Strategies             | OPS, PSC, LSC |
| ☞ Ops Organization       | OPS           |
| ☞ Tactics                | OPS           |
| ☞ Resource needs         | OPS, PSC, LSC |
| ☞ Facilities             | OPS, LSC      |
| ☞ Order Resources        | PSC, LSC      |
| ☞ Support Plans          | LSC, PSC      |
| ☞ Agency considerations  | LO            |
| ☞ Safety                 | SO            |
| ☞ Media                  | IO            |
| ☞ Finance                | FSC           |
| ☞ Finalize & approve IAP | IC or UC      |

April 02

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## Post Planning Meeting Activities

- ☞ Order resources
- ☞ Complete Assignments (204)
- ☞ Update Communications Plan (205)
- ☞ Update Medical Plan (206)
- ☞ Safety plan
- ☞ Support Plans
- ☞ Generate incident map
- ☞ When ready, PSC submits the completed IAP to the IC's for approval/signature

April 02

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## Benefits of Incident Action Plans

- ☞ Clear objectives and strategies
- ☞ Management tool
- ☞ Coordinated multi-agency tactics
- ☞ Facilitated shift briefings
- ☞ Organizational communications tool
- ☞ Documentation

April 02

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## Written Incident Action Plans: Essential Elements

- ☞ Statement of objectives
- ☞ Organization
- ☞ Tactics & resource assignments
- ☞ Support plans (Safety, Medical, Communications and others as needed)

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FORM #	FORM NAME	PREPARED FOR PLAN BY:
202	Incident Objectives	Resources Unit
203/207	Organization List/Chart	Resources Unit
204	Division Assignment Lists	OPS Section Chief and Resources Unit
205	Communications Plan	Communications Unit
206	Medical Plan	Medical Unit
220	Air Operations Summary	Air Ops Branch Dir.
None	Traffic Plan	Ground Support Unit
208	Safety Plan	Safety Officer
None	Map	Situation Unit
None	Demobilization Plan	Demob. Unit

## Incident Objectives ICS-202

INCIDENT OBJECTIVES	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED
4. OPERATIONAL PERIOD (DATE/TIME)			
5. GENERAL CONTROL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES)			
6. WEATHER FORECAST FOR OPERATIONAL PERIOD			
7. GENERAL/SAFETY MESSAGE			
8. ATTACHMENTS (X IF ATTACHED)			
<input type="checkbox"/> ORGANIZATION LIST (ICS 203) <input type="checkbox"/> DIVISION ASSIGNMENT LISTS (ICS 204) <input type="checkbox"/> COMMUNICATIONS PLAN (ICS 205) <input type="checkbox"/> MEDICAL PLAN (ICS 206) <input type="checkbox"/> AIR OPERATIONS SUMMARY (ICS 220)			

## Organization Assignment List ICS-203

ORGANIZATION ASSIGNMENT LIST		1. Incident Name	2. Date	3. Time	4. Operational Period	5. Operations Section Chief
A. Incident Command and Staff						
Position	Name					
B. Branch 1 - Division Groups						
Position	Name					
C. Branch 2 - Division Groups						
Position	Name					
D. Branch 3 - Division Groups						
Position	Name					
E. Branch 4 - Division Groups						
Position	Name					
F. Branch 5 - Division Groups						
Position	Name					
G. Branch 6 - Division Groups						
Position	Name					
H. Branch 7 - Division Groups						
Position	Name					
I. Branch 8 - Division Groups						
Position	Name					
J. Branch 9 - Division Groups						
Position	Name					
K. Branch 10 - Division Groups						
Position	Name					
L. Branch 11 - Division Groups						
Position	Name					
M. Branch 12 - Division Groups						
Position	Name					
N. Branch 13 - Division Groups						
Position	Name					
O. Branch 14 - Division Groups						
Position	Name					
P. Branch 15 - Division Groups						
Position	Name					
Q. Branch 16 - Division Groups						
Position	Name					
R. Branch 17 - Division Groups						
Position	Name					
S. Branch 18 - Division Groups						
Position	Name					
T. Branch 19 - Division Groups						
Position	Name					
U. Branch 20 - Division Groups						
Position	Name					
V. Branch 21 - Division Groups						
Position	Name					
W. Branch 22 - Division Groups						
Position	Name					
X. Branch 23 - Division Groups						
Position	Name					
Y. Branch 24 - Division Groups						
Position	Name					
Z. Branch 25 - Division Groups						
Position	Name					

## Assignment List ICS-204

DIVISION ASSIGNMENT LIST		1. Incident Name	2. Date	3. Time	4. Operational Period	5. Operations Section Chief
A. Incident Command and Staff						
Position	Name					
B. Branch 1 - Division Groups						
Position	Name					
C. Branch 2 - Division Groups						
Position	Name					
D. Branch 3 - Division Groups						
Position	Name					
E. Branch 4 - Division Groups						
Position	Name					
F. Branch 5 - Division Groups						
Position	Name					
G. Branch 6 - Division Groups						
Position	Name					
H. Branch 7 - Division Groups						
Position	Name					
I. Branch 8 - Division Groups						
Position	Name					
J. Branch 9 - Division Groups						
Position	Name					
K. Branch 10 - Division Groups						
Position	Name					
L. Branch 11 - Division Groups						
Position	Name					
M. Branch 12 - Division Groups						
Position	Name					
N. Branch 13 - Division Groups						
Position	Name					
O. Branch 14 - Division Groups						
Position	Name					
P. Branch 15 - Division Groups						
Position	Name					
Q. Branch 16 - Division Groups						
Position	Name					
R. Branch 17 - Division Groups						
Position	Name					
S. Branch 18 - Division Groups						
Position	Name					
T. Branch 19 - Division Groups						
Position	Name					
U. Branch 20 - Division Groups						
Position	Name					
V. Branch 21 - Division Groups						
Position	Name					
W. Branch 22 - Division Groups						
Position	Name					
X. Branch 23 - Division Groups						
Position	Name					
Y. Branch 24 - Division Groups						
Position	Name					
Z. Branch 25 - Division Groups						
Position	Name					

INCIDENT RADIO COMMUNICATIONS PLAN		1. Incident Name	2. Date/Time Prepared	3. Operational Period Date/Time	
Radio Type/Code	Channel	Function	Frequency/Channel	Assignment	Remarks
King					
NFC					
King					
NFC					
King					
NFC					
King					
NFC					
King					
NFC					
King					
NFC					
King					
NFC					
King					
NFC					

## Incident Communications Plan ICS 205



## Objectives Review

### *Objectives covered in this module included:*

- ☞ Explain the function of the Operational planning worksheet (ICS 215) and other forms which may be used in preparing an incident action plan (IAP)
- ☞ Explain the criteria when an IAP should be completed in writing
- ☞ Identify the kinds of supporting materials included in an IAP

## Module 11 Exercise

- ☞ The goal of this exercise is to utilize the planning process and to develop response objectives, resource status display, operational planning worksheet, assignment list and incident action plan.

## Best Response: Lessons Learned



Lieutenant Commander Jim Elliott  
U.S. Coast Guard  
Gulf Strike Team

## Overview

- Contingency Planning System
- National Contingency Plan
- Developing Contingency Plans
- Evaluating Contingency Plans
- The “Best Response”

## Contingency Planning System

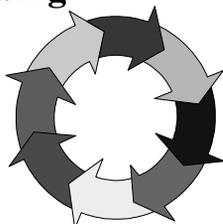
- Methodology for meeting emergencies that exceed our ability to respond under normal conditions
- The primary goal of Contingency Planning is to increase the probability of success

## National Response System

- Plan for emergencies and develop procedures for discharges and releases
- Coordinate planning and response activities with each other
- Coordinate planning and response activities with stakeholders

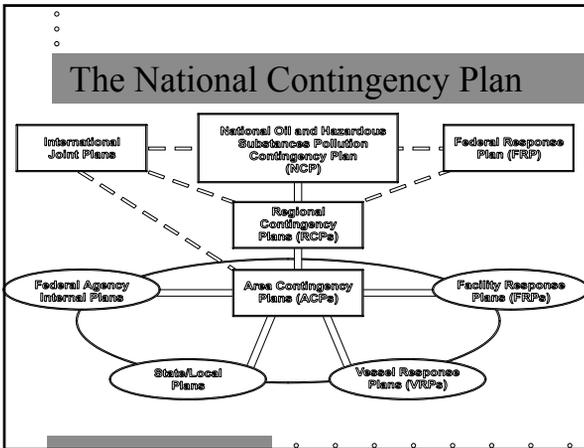
## Contingency Planning System

- **Planning**
- **Training**
- **Exercising**
- **Evaluation**



## Benefits of Planning and Preparedness

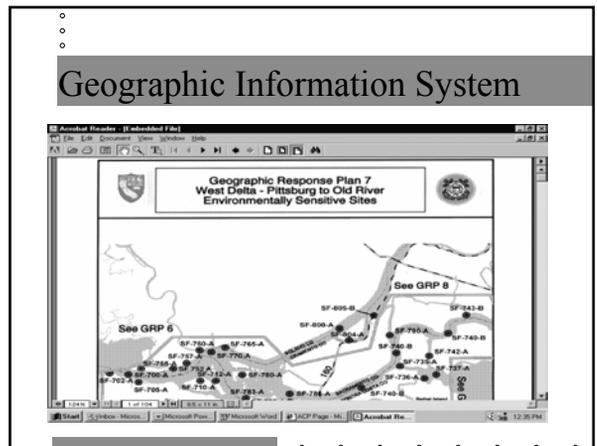
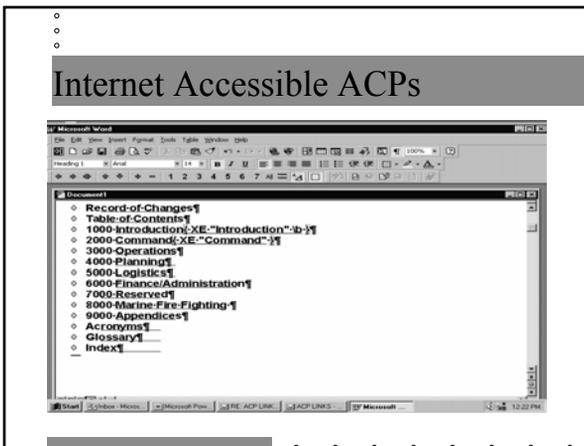
- High Confidence and Competency
- High Probability of Success
- Resource Availability
- Efficient/Effective Response
- Pre-designated Strategy/Objectives
- Stakeholder Trust and Support
- Higher Public Trust



- ## Contingency Plan Development
- **Scenario Approach**
    - Selection of Scenario Types
    - Scenario Development and Format
  - **Inventory Approach**
    - Equipment
    - Response Organizations
  - **Operational Approach**
    - Response Guidelines
    - Checklists

- ## Contingency Plans
- Command and Control System
  - Safety Plans
  - Environmentally Sensitive Areas
  - Scenarios
  - Salvage / Marine Fire Fighting
  - Alternative Response Technologies
  - Area Resources and Response Equipment
  - Personnel and Resources
  - Cost Documentation
  - Mutual Aid Agreements

- ## Contingency Plans
- Reflect inter-agency response management structure
  - Single, comprehensive resource familiar to all response agencies
  - A Working Document
  - Leverage Technology (GIS, internet)



## Regional Response Plans

- **Alternate Response Technologies**
- **MOUs/International Agreements**
- **Coordinate resources of multiple agencies or governments**
- **Environmental Damage Assessments**



Once a plan has been developed, the plan should be exercised, evaluated and continuously improved by all agencies and stakeholders.

The Coast Guard evaluates the success of the plan against “critical success factors;” the things that “must go right” for the response to be a success.

## Best Response

Goal	Key Business Drivers	Critical Success Factors
Best Response	Human Health	<ul style="list-style-type: none"> <li>•No Public Injuries</li> <li>•No Worker Injuries</li> <li>•Accurate/timely information provided</li> </ul>
	Natural Environment	<ul style="list-style-type: none"> <li>•Source of discharge minimized</li> <li>•Source contained</li> <li>•Sensitive areas protected</li> <li>•Resource damage minimized</li> </ul>
	Economy	<ul style="list-style-type: none"> <li>•Economic impact minimized</li> </ul>
	Public Communications	<ul style="list-style-type: none"> <li>•Positive media coverage</li> <li>•Positive public perception</li> </ul>
	Stakeholder Support	<ul style="list-style-type: none"> <li>•Minimize impact</li> <li>•Stakeholder well informed</li> <li>•Positive meetings</li> <li>•Prompt handling of claims</li> </ul>

## Questions



**Appendix C**  
**Technical Assistance Team Lead**  
**Detailed Requirements Report**  
*(Developed following the Notification Exercise)*

***Notification Exercise:***

ACP requested an advanced TAT to arrive on the morning of March 16, 2005, to support oil spill response operations associated with a 55,000 barrel oil spill at the Pacific entrance to the canal.

***Proposed Advanced Team:***

1. GST Response Officer (command/control and technical support)
2. GST Response Supervisor (in-field technical support)
3. NOAA Scientific Support Coordinator
4. Additional NOAA SSC for field operations (shoreline assessment)
5. U.S. EPA OSC (waste oil disposal issue)
6. USN SUPSALV Representative (salvage / mechanical recovery)

Note: All will fly commercial airlines from most readily available source. ACP will coordinate all logistics in-country and expedite country clearance process with the U.S. Embassy.

The ACP also requested that the following equipment and associated personnel support be sent as soon as possible:

***1. Dispersants Deployment Equipment:***

- a. Clean Caribbean and Americas (CCA) owns the only Aviation Dispersant Delivery System (ADDS) in CONUS US, located in Fort Lauderdale, Florida (estimate \$25,000 per day). The system can carry ~5,000 gallons of dispersant on board.
- b. Based on size of spill, the volume of dispersants required will exceed the initial 5,000 gallon load limit and we will require an additional aircraft to delivery dispersants. Note, on a volume-of-dispersant to volume-of-oil basis, applications rates range from less than 1:100 to more than 1:10, depending on the thickness of the oil.
- c. To deploy the ADDS system, a C-130 will be required from CG AIRSTA Clearwater (>\$11,000 per hour of operation). C-130 will transit from Clearwater, Florida, to Fort Lauderdale, Florida, to load the ADDS and initial dispersants load. The aircraft will then transport system to Panama City, Albrook Airport.
- d. In the U.S., for dispersant applications, a National Strike Force team is required to monitor the efficacy/success of the dispersant application. This is referred to as Special Monitoring for Applied Response Technologies (SMART) and requires at least two trained individuals and

associated monitoring/sampling equipment (fluorometer). The SMART team will also require vessel support once in country.

- e. A spotter aircraft is also typically required for dispersant operations to help direct the C-130. This aircraft may be available locally.
- f. An alternative to using an airborne delivery system will be to obtain local vessels and use in-line proportioners/eductors to apply dispersants.

**2. *Mechanical Recovery Equipment:***

- a. The U.S. National Strike Force and U.S. Navy can provide various mechanical recovery systems, ranging from Vessel of Opportunity Skimming Systems (DESMI 250 skimmer w/associated prime mover) to Viscous Oil Pumping Systems.
- b. All equipment must be operated by U.S. government personnel trained in the use and operation of this technical equipment.
- c. GST will send VOSS and extra skimming systems. U.S. Navy will also send various types of mechanical recovery equipment.

**3. *Oil Storage Capacity:*** The volume of oil recovered will quickly overwhelm Panama's ability to store waste oil. The National Strike Force and U.S. Navy can provide various temporary storage devices, including lancer barges, sea slugs and dracones. Recommend Panama use barges where available and consider alternative methods of oil storage/decanting (ex. a swimming pool was used during the Morris J. Berman response in San Juan, Puerto Rico, and a pit was excavated on the beach during the Upham Beach response in Tampa, Florida).

**4. *Salvage and Contaminated Water Diving Support:***

- a. The U.S. Navy, National Strike Force and Coast Guard Marine Safety Center can provide salvage oversight and consultation. However, recommend Panama Canal Authority contract a commercial salvor to raise the barge and three lost containers.
- b. A contaminated water diving capability does not exist in Panama. Additionally, the U.S. Navy does not provide this service. Contaminated water diving services are available in the U.S. (example: Eason Diving, Charleston, South Carolina, and Titan Salvage, Fort Lauderdale, Florida). Panama Canal Authority will need to contract directly for these services.

**5. *Oil Transfer Operations:*** The Gulf Strike Team can provide adequate oil transfer pumping systems (9 CCN-150 pumps and the viscous oil pumping system). Additionally, the U.S. Navy has adequate oil transfer pumping capabilities.

**6. *Shoreline Contamination Assessment / Clean-up Options:*** Extensive shoreline contamination assessment capabilities do not exist in Panama. There are myriad environmentally sensitive areas (ex. Smithsonian Marine Lab, tidal flats, etc.). NOAA, USFWS, USCG and contract personnel can provide these services. Recommend sending a team of two NOAA and two USFWS scientists to lead shoreline assessment teams. The scientists can be supplemented by 4 to 6

National Strike Force personnel trained in shoreline contamination assessments. Note that Dr. Michel and Research Planning Incorporated recently completed the Environmentally Sensitive Index for the Panama Canal. Recommend that Dr. Michel design and oversee the shoreline contamination assessment.

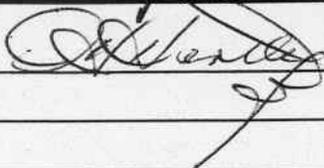
Equipment Summary:

1. Dispersants:
  - a. C-130
  - b. ADDS
  - c. Dispersants
  - d. SMART Team/Equipment
  - e. Spotter Aircraft
  - f. Personnel (SSC, 2 GST, trained observer/spotter (NOAA or GST))
2. Shoreline Assessment:
  - a. 2 NOAA
  - b. 2 USFWS
  - c. 6 NSF
  - d. RPI
3. Mechanical Recovery:
  - a. VOSS
  - b. Pumps/Skimmers/Prime Movers
  - c. 6 GST Response Technicians
  - d. 1 GST Response Supervisor
  - e. 2 USN Class 5 Skimmers (Marcos) w/36,000-gallon bladders
  - f. 4 USN boom handling boats (24'ft/270-HP diesel)
  - g. 1 ANTOV-124 aircraft (~\$250,000K)
  - h. 1 C-130 (~\$140,000K)
  - i. ~22 USN personnel (mechanical recovery/transfer ops)
4. Storage Systems:
  - a. Sea Slugs (10,000-gallon)
  - b. Dracones (50,000-gallon and 136,000-gallon)
  - c. Lancer Barge
  - d. 2 GST Personnel
  - e. 2 USN Personnel
5. Salvage / Contaminated Water Diving:
  - a. Salvage / Commercial Diving Contracts
  - b. USN Representative
6. Transfer Pumps:
  - a. GST Pump Load
  - b. 4 GST Response Technicians
  - c. USN 2-6 inch pumping system

## **Appendix D: Incident Action Plan**

1. Incident Name <b>SOFIA SPILL</b>	2. Operational Period to be covered by IAP (Date / Time) From: <b>0800 16 MAR / 0800 17 MAR</b>	IAP COVER SHEET
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3. Approved by:

FOSC **CAPT HARTLEY** 

SOSC **ANAM**

RPIC \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## INCIDENT ACTION PLAN

The items checked below are included in this Incident Action Plan:

- ICS 202-OS (Response Objectives)

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  - ICS 203-OS (Organization List) - OR - ICS 207-OS (Organization Chart)

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  - ICS 204-OSs (Assignment Lists)  
One Copy each of any ICS 204-OS attachments:
    - Map
    - Weather forecast
    - Tides
    - Shoreline Cleanup Assessment Team Report for location
    - Previous day's progress, problems for location
- 
- ICS 205-OS (Communications List)

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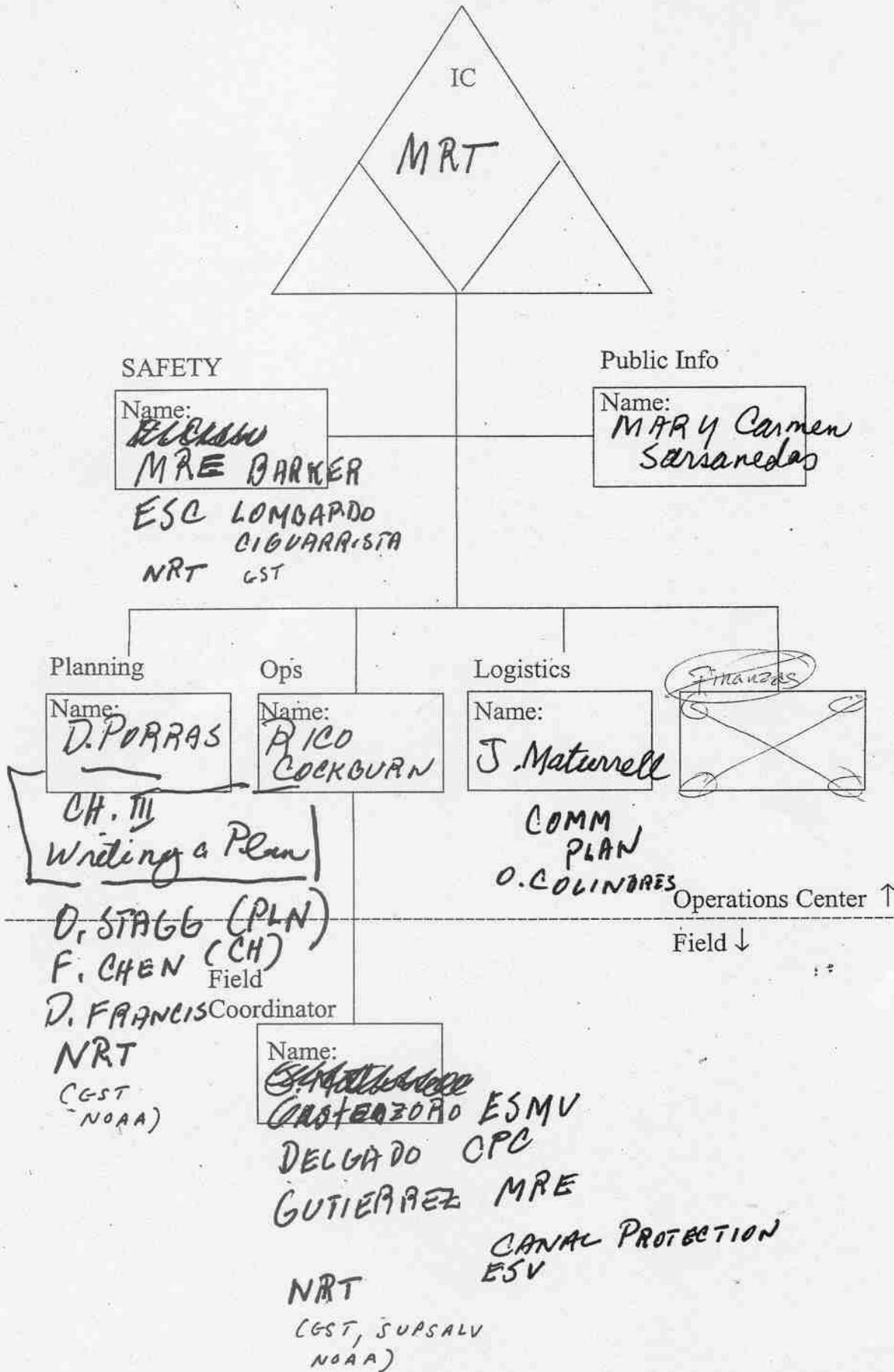
  - ICS 206-OS (Medical Plan)
- ~~Shoreline Cleanup Assessment Team Report for location~~
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

4. Prepared by: <b>POAAS</b>	Date / Time <b>16 MAR 05 / 1400</b>
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Electronic version: NOAA 1.0 June 1, 2000

<b>1. Incident Name</b> Balboa Reach Impact	<b>2. Operational Period (Date/Time)</b> From: 0900 17MAR05 To: 0900 18MAR05	<b>INCIDENT OBJECTIVES</b> ICS 202-CG
<b>3. Objective(s)</b> <ol style="list-style-type: none"> <li>1. Reopen Panama Canal vessel traffic at the earliest opportunity.</li> <li>2. Minimize risks and control hazards to Public and Responders. Prepare and distribute safety plan.</li> <li>3. Commence T/B SOFIA salvage assessment and operations for marine casualty.</li> <li>4. Minimize additional discharge of oil and aggressively recover oil.</li> <li>5. Conduct dispersant application operations.</li> <li>6. Engage stakeholders and public through pro-active use of Liaison/Information Officers. Keep Joint Information Center/Liaison information management flow current.</li> <li>7. Minimize environmental damage. Prioritize protection strategies for resources at risk.</li> <li>8. Effectively track evolving situation and resources.</li> <li>9. Establish effective communications plan. Distribute communications plan to all responders.</li> <li>10. Effectively integrate National Response Team personnel and equipment into Panama Canal Authority Incident Command System.</li> </ol>		
<b>4. Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions)</b> All personnel should review and sign the Safety Plan prior to commencing work.		
<b>5. Prepared by: (Planning Section Chief):</b> Captain D. Porras <span style="float: right;"><b>Date/Time</b> 1030/16MAR05</span>		

ICS STRUCTURE - BALBOA REACH IMPACT



1. Incident Name <i>ARCAICA / SOFIA</i>		2. Operational Period (Date / Time) From:		ASSIGNMENT LIST ICS 204-OS	
3. Branch			4. Division/Group		
5. Operations Personnel					
		Name	Affiliation	Contact # (s)	
Operations Section Chief:		<i>Diego Ponce</i>	<i>Planning</i>		
Branch Director:		<i>Federico Cockburn</i>	<i>Ops</i>		
Division/Group Supervisor:		<i>Agustin Delgado</i>	<i>Salvage</i>		
6. Resources Assigned This Period <span style="float: right;">"X" indicates 204a attachment with special instructions</span>					
Strike Team / Task Force / Resource Identifier	Leader	Contact Info. #	# of Persons	Notes / Remarks	
<i>Talleres Industriales</i>	<i>Sra. Mojica</i>	<i>445-1011</i>	<i>10</i>		<input type="checkbox"/>
<i>Industrial Division</i>	<i>Mr. Julian Cruz</i>	<i>443-2201</i>	<i>8</i>		<input type="checkbox"/>
<i>Outside Divers</i>	<i>Mr. Smith</i>		<i>4 attend</i>		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
7. Assignments					
<i>Talleres Industriales - salvage the M/U Sofia and recover the remaining oil.</i>					
<i>Industrial Division - locate &amp; recover 3 containers.</i>					
8. Special Instructions for Division / Group					
<i>Talleres Ind.: Oil recovered will be taken to special tanks to be sent to companies who will dispose of the oil. Example: CEMEX.</i>					
<i>Industrial Div.: The recovered containers will be put aboard trailers to be taken to specially designated site.</i>					
9. Communications (radio and / or phone contact numbers needed for this assignment)					
Name / Function	Radio: Freq. / System / Channel	Phone	Pager		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
Emergency Communications					
Medical _____	Evacuation _____	Other _____			
10. Prepared By (Resources Unit Leader)		Date / Time	11. Approved By (Planning Section Chief)		Date / Time

ASSIGNMENT LIST

June 2000

ICS 204-OS



1. Incident Name: Dock 6 - Vessel Collision 2. Operational Period (Date / Time): From: 03-16-05 / 13:50 ASSIGNMENT LIST ICS 204-OS

3. Branch: Operations 4. Division/Group: Field Coordinator

5. Operations Personnel  
 Name Affiliation Contact # (s)  
 Operations Section Chief: Federico Cockburn  
 Branch Director: \_\_\_\_\_  
 Division/Group Supervisor: \_\_\_\_\_

6. Resources Assigned This Period "X" indicates 204a attachment with special instructions

Strike Team / Task Force / Resource Identifier	Leader	Contact Info. #	# of Persons	Notes / Remarks
<u>Containment</u>	<u>L. Araya</u>	<u>Portable 226</u>	<u>15</u>	<input type="checkbox"/>
<u>Recovery</u>	<u>A. Reyes</u>	<u>Portable 218</u>	<u>36</u>	<input type="checkbox"/>
<u>Disposal</u>	<u>O. Martinez</u>	<u>678-1520</u>	<u>20</u>	<input type="checkbox"/>
<u>Transportation</u>	<u>L. Antonio</u>	<u>Portable 252</u>	<u>25</u>	<input type="checkbox"/>
<u>Waste Disposal</u>	<u>F. Marcus</u>	<u>678-3856</u>	<u>20</u>	<input type="checkbox"/>
				<input type="checkbox"/>
				<input type="checkbox"/>

7. Assignments  
 - Monitoring the boom deployment already setup (tidal change)  
 - Operate 5 recovery stations  
 - Make sure maintain the flow for recovered / transportation of recovered oil  
 - Organize the distribution of recovered oil

8. Special Instructions for Division / Group  
 - Coordinate efforts and report results to the Field Coordinator at 10:00 and 17:00 of each operational period

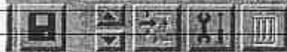
9. Communications (radio and / or phone contact numbers needed for this assignment)

Name / Function	Radio: Freq. / System / Channel	Phone	Pager
<u>Gilberto Gastezero</u>	_____	<u>676-0267</u>	<u>1383</u>
_____	_____	_____	_____
_____	_____	_____	_____

Emergency Communications  
 Medical: \_\_\_\_\_ Evacuation: \_\_\_\_\_ Other: \_\_\_\_\_

10. Prepared By (Resources Unit Leader) Gilberto Gastezero Date / Time: 03/16/05 14:15  
 11. Approved By (Planning Section Chief) \_\_\_\_\_ Date / Time \_\_\_\_\_

Electronic version: NOAA 1.0 June 1, 2000



**Model Settings**

Start time: March 15, 2005 20:30  
 Duration: 30 hours  
 Computational time step: 0.10 hr  
 Include the Minimum Regret  
 Solution (RED SPLOTS on screen)

Show Currents  
 Prevent Land Jumping

**Universal Movers**

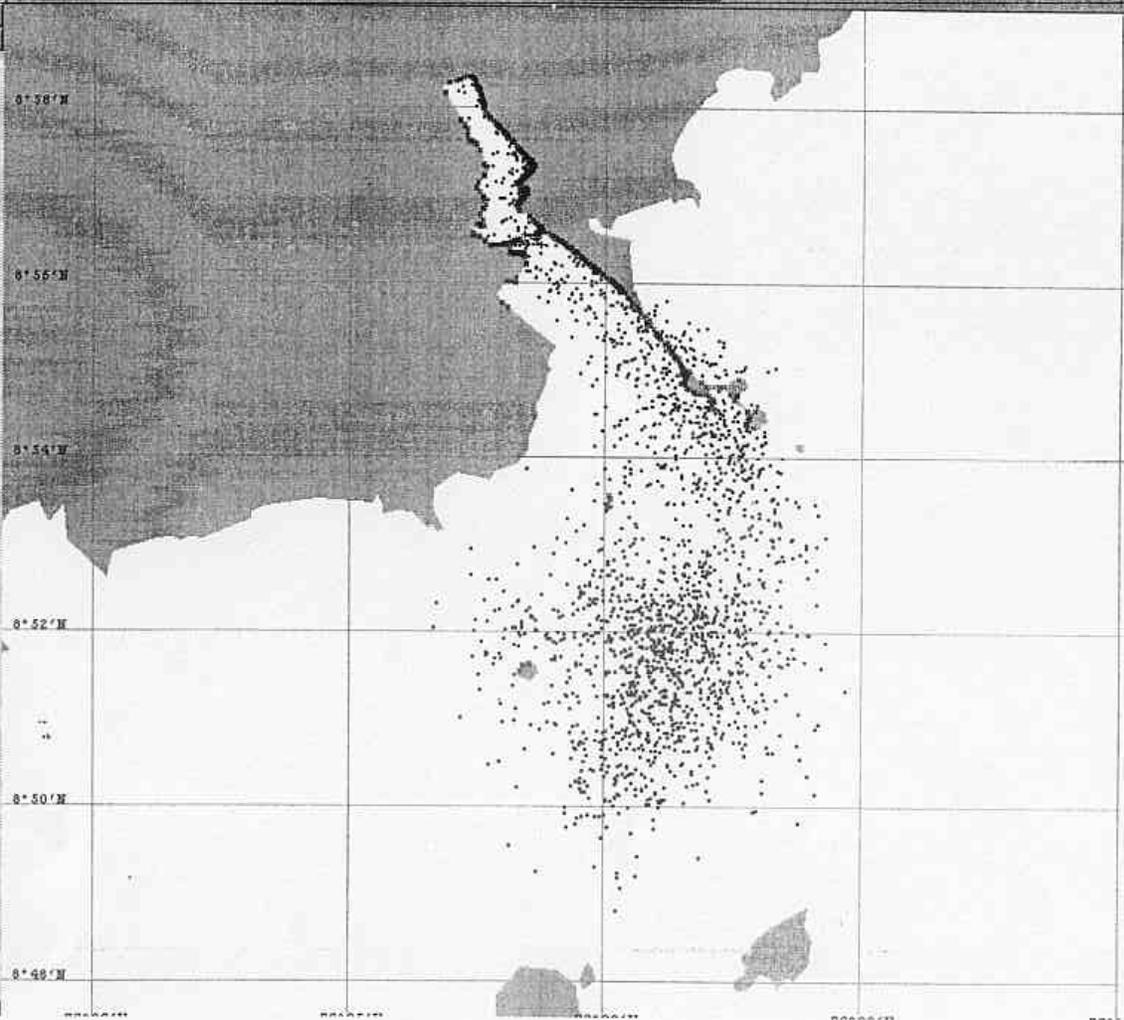
Random: "Diffusion"  
 Constant Wind: 6 knots from NNW  
 Variable Wind

**aps**

Vector Map: pshore.bna  
 Refloat half life: 1 hr  
 Show Land / Water Map

**Movers**

- ▶ Comments: "pDACriangvel CUR"
- ▼ Comments: "pWACTide CUR"
  - Active
  - Show Grid
  - Show Velocities (@ 1 in = 1 m/s)
  - ▶ Reference Point
  - ▼ Tide File: ShioHBalboa2004.txt
    - active
    - Station Name: BALBOA
    - ▼ Show High Lows
      - Low Tide -0.4 ft 01:00 03/15/2005
      - High Tide 14.6 ft 07:17 03/15/2005
      - Low Tide 0.8 ft 13:17 03/15/2005
      - High Tide 15 ft 19:32 03/15/2005
      - Low Tide 0.8 ft 01:44 03/16/2005
      - High Tide 13.5 ft 07:58 03/16/2005
      - Low Tide 2.1 ft 14:02 03/16/2005**
      - High Tide 13.7 ft 20:12 03/16/2005
      - Low Tide 2 ft 02:32 03/17/2005
      - High Tide 12.2 ft 08:42 03/17/2005
      - Low Tide 3.4 ft 14:52 03/17/2005
      - High Tide 12.4 ft 20:57 03/17/2005
      - Low Tide 3.1 ft 03:25 03/18/2005
      - High Tide 11.2 ft 09:38 03/18/2005
      - Low Tide 4.5 ft 15:51 03/18/2005





MEDICAL PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD				
	Sophia Spill	3/19/05	1330	17-18 24hrs				
5. INCIDENT MEDICAL AID STATIONS								
MEDICAL AID STATIONS	LOCATION	PARAMEDICS						
		YES	NO					
1	Josho Miguel Locks / Nurse		✓					
1	Mira Flores Locks / Nurse		✓					
1	Balboa Doctor Nurse		✓					
6. TRANSPORTATION								
A. AMBULANCE SERVICES								
NAME	ADDRESS	PHONE	PARAMEDICS					
			YES	NO				
1	ACP	119	✓					
1	Bambidos	119	✓					
B. INCIDENT AMBULANCES								
NAME	LOCATION	PARAMEDICS						
		YES	NO					
n/a	/							
7. HOSPITALS								
NAME	ADDRESS	TRAVEL TIME		PHONE	HELIPAD		BURN CENTER	
		AIR	GRND		YES	NO	YES	NO
	S Social	n/a	✓			✓		✓
	Santa Thomas		✓			✓		✓
8. MEDICAL EMERGENCY PROCEDURES								
All accidents will be transported to local emergency facility.								
Means of transportation will be by ACP ambulance and or Bambido ambulance								
206 ICS 6-78	9. PREPARED BY (MEDICAL UNIT LEADER)			10. REVIEWED BY (SAFETY OFFICER)				
	<i>[Signature]</i>			<i>[Signature]</i>				

NPES 1331

## Appendix E: Evaluation of Objective Criteria

Following completion of the facilitated exercise play, evaluators held a meeting to discuss and collaborate on their personal observations of the exercise and ensuing recommendations. This appendix includes the findings of the evaluation team in assessing the achievement of each objective and associated objective criteria.

### **Objective #1**

Evaluate the ability of the ACP and the NRT in implementing response actions in accordance with the MOA.

- 1-1 *Could the incident preliminary information be sent to the NRT through any of the available routes (NRC Report form, fax, phone confirmation) with 30 minutes upon activation of the MOA?*
- Notification from the ACP to the NRT was made through the NRC web report within 20 minutes of deciding to activate the MOA.
  - Notification confirmation was sent via telephone call from NRC.
- 1-2 *Did the ACP keep communication efforts with the NRC for follow up of initial assessment information sent through the NRC report form?*
- The NRC confirmed receipt of the web report, and confirmed the information was clear.
  - Recent improvements to the website facilitated web reporting.
- 1-3 *Did the ACP provide enough information as to assist the NRT in the preliminary evaluation on the potential harm, extension and impact of the incident?*
- ACP provided information on functionality.
  - ACP provided a prioritization of assets needed.
  - The use of standardized ICS terms would have facilitated communication of needs with greater clarity.
  - Access to ACP website would have assisted NRT in accessing information on the preliminaries of the incident and response.
  - A list of available U.S. equipment would have helped ACP in communicating needs.
- 1-4 *Did the ACP's ICS structure account for the integration of NRT personnel?*
- The TAT was integrated into several different sections of the ICS structure where expertise could be of assistance.
  - The senior GST member assumed the role of TAT leader as per the MOA.

### *Additional Discussion*

The ACP and NRT were successful in implementing response actions in accordance with the MOA. Primary issues from previous notification exercises (with regard to notification through the NRC and to the NRT) have been resolved, yet there is still room for improvement regarding notification. The NRT relied on ACP to communicate technology priorities and ACP was able to advise the TAT, once on-scene, of the priorities and any

additional needs. However, it was recommended that ACP communicate very clearly what resources and equipment are needed first and foremost for incident response. The TAT successfully integrated into several different sections of the ICS structure, which were already established when the TAT arrived on-scene. The preliminary link-up between the TAT and the Incident Commander would be necessary during a real response. This would ensure clear establishment of a point of contact through a face-to-face meeting between the Incident Commander and the NRT once the TAT arrived in-country and on-scene. Additionally, a single entity within the TAT should direct all agencies on the TAT and could more easily coordinate with the U.S. State Department regarding response activities and needs.

### ***Objective #2***

Evaluate the effectiveness of the CAC for a major incident.

- 2-1 *Were the Center's facilities appropriate for the distribution of participants?*
- The Center's facilities were excellent for small to medium-sized incidents. For large incidents there are other spaces available to expand into for sections with multiple staff.
  - If the additional space located within the CAC "expansion wing" will be needed, a review of access to telephone and computer networks in those rooms should be undertaken.
  - Response sections will depend more heavily on communications and meeting schedule if located in other rooms.
- 2-2 *Did the Center's configuration allow for an appropriate arrangement of Command Staff and break rooms for other ICS sections?*
- The Emergency Command Center within the CAC is excellent for briefings and ideal for information display (video display, maps, tech support, etc).
  - The Conference Room was appropriate for Command Staff meetings.
  - Linear layout of the Emergency Command Center is not best suited for Unified Command meetings or large section group meetings. Conference room and break out rooms would assist in this issue.
- 2-3 *Was the use of white boards, message boards and computers effective during the exercise?*
- Excellent display of live video feed from the Canal CCTV system.
  - Computer access to the Contingency Plan is limited for those in remote room or in the field, and need the ability to print applicable Contingency Plan information.
  - Support staff may be needed for administrative support of the command center (copies, paper, chairs, etc.).
  - Vests or other form of identification may assist in clarifying participant roles.
- 2-4 *Did the Center's facilities provide an appropriate working environment (ideal lighting, absence of disturbing noise, identification of doorways and access to building?)*

- All criteria points were met successfully.
- A location for press conferences should be predetermined (separate from the command center) and quickly relayed to the media in the first press release.

*Additional Discussion*

If expansion of the ICS into other areas of the CAC is necessary in dealing with larger incidents, the same type of facilities and technology need to be accessible for each ICS section, including phones, computers, screens, drop lines, tables, chairs, etc. Because there are no drop lines for phones and computer access in overflow rooms, it would be difficult to access the Internet, thus delaying communication with other incident responders. There is an expansion plan for the CAC for additional meeting rooms. While the CCTV system display is excellent in the CAC, computer and printing access is difficult and additional white boards would be helpful for use in a large incident.

***Objective #3***

Undertake a thorough planning cycle, which produces a written IAP in accordance with the response structure, considers future operational periods, and maintains proper activity logs.

- 3-1 *Was the meeting held between the Incident Commander and the ICS Section Chiefs to establish and follow an IAP?*
- A successful meeting was held with the establishment of appropriate goals and objectives.
  - Consider pre-incident designation of positions within the command structure and give specialized position training.
  - Modeling significantly helped in determining the extent and complexity of the spill.
- 3-2 *Did communications among the ICS members follow the chain of command?*
- Communication followed the chain of command with good discipline that is typical of the ACP.
  - Objectives and assignments were clearly made by name, so each party knew their responsibilities in meeting the objectives.
- 3-3 *Did the ICS organization control, organize and evaluate the information received in order to establish priorities in the response operations?*
- The well organized ICS structure assisted in the organization of the information.
  - Participants had not been pre-trained in their positions, and still performed their positions very well.
- 3-4 *Was there an action plan for at least a second operational period addressing the pending issues for the next 24 hours?*
- IAP for the next operational period was prepared during the tactics meeting and approved by the Incident Commander.

- 3-5 *Did the organization take into account media relations to address the public, stakeholders, and government representatives?*
- Information was released to the press in the form of a release and conference.
  - Participants proactively engaged with the media.
  - During large incidents, a Joint Information Center (JIC) should be set up. Pre-established information sheets and risk communication information for the public would be valuable.
- 3-6 *Did the ICS organization use the forms available in the Contingency Plan to keep track of the events which the IAP agreed upon and the log of actions taken?*
- Initial fundamental forms were used and provided clear display of information.
  - The Contingency Plan was not fully utilized yet contains information, forms, and checklists that are critical to a successful response.

*Additional Discussion*

Specialized position training, or ICS position-specific training, used in training and establishing Incident Management Assistance Teams (IMATs), could facilitate better preparation for response using ICS. IMATs are intended to provide a rapidly deployable management structure for the highest priority responses. They are intended to serve as an initial organizing force whose efforts will be transferred to long-term response organizations. Their development and implementation have proven successful for multiple U.S. agencies, including the U.S. Fire Service, USCG, and EPA. (EPA has trained Incident Management Teams (IMTs) for Regional incidents and, in the near future, will expand the concept to create national IMATs.) However, it must be taken into consideration that specializing personnel in the reduced ACP structure (as compared to the size of such U.S. agencies) may be more difficult, and a cross-reference of training (among multiple ICS positions) was suggested as a more practical alternative for the ACP. It was recommended that ACP provide ICS training from basic, intermediate, and advanced levels for all potential responders; subsequently, ACP can pre-designate certain responders in specific ICS positions and provide additional expanded training on position-specific ICS roles and responsibilities.

The ICS structure established during this exercise organized and evaluated information with a high level of success. Use of ICS forms was successful initially. The Contingency Plan was not used to its full extent during the exercise. It was noted that the Contingency Plan contains a great deal of information, forms, and other resources that could be highly valuable and are accessible for convenient use.

## **Appendix F: Acronyms and Abbreviations**

### ***A***

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AAR	After Action Report
ACP	Autoridad del Canal de Panamá (Panama Canal Authority)
ADDS	Aviation Dispersant Delivery System
AMP	Autoridad Marítima de Panamá (Panama Maritime Authority)
ANAM	Autoridad Nacional del Ambiente (Panama’s National Authority on the Environment)

### ***C***

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CAC	Crisis Action Center
CCC	Clean Caribbean Cooperative
CCTV	Closed Circuit Television

### ***D***

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DHS	U.S. Department of Homeland Security
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy

### ***E***

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EMS	Emergency Management System
EPA	U.S. Environmental Protection Agency
ERT	Environmental Response Team
ESI	Environmentally Sensitive Index

***F***

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FOG                      Field Operations Guide

***G***

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GIS                      Geographic Information System

GST                      Gulf Strike Team

***H***

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HIT                      High Interest Transit

HVT                      High Value Transit

***I***

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IAP                      Incident Action Plan

IC                        Incident Commander

ICP                      Incident Command Post

ICS                      Incident Command System

IFO                      Intermediate Fuel Oil

IMAT                    Incident Management Assistance Team

IMT                      Incident Management Team

ISA                      Incident Specific Agreement

***J***

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JIC                      Joint Information Center

***M***

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MGO                    Marine Gas Oil

MOA            Memorandum of Agreement

M/V            Motor Vessel

***N***

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NOAA           National Oceanic and Atmospheric Administration

NRC            National Response Center

NRP            National Response Plan

NRT            National Response Team

NSFCC          National Strike Force Coordination Center

***O***

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OPC            Oil Pollution Control

OSC            On-Scene Coordinator

***P***

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PCSOPEP       Panama Canal Shipboard Oil Pollution Emergency Plan

***S***

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SCBA           Self Contained Breathing Apparatus

SME            Subject Matter Expert

SMN            Servicio Marítimo Nacional (Panama's National Maritime Service)

SONS           Spills of National Significance

SOP            Standard Operating Procedure

SSC            Scientific Support Coordinator

SUPSALV       Navy Supervisor of Salvage and Diving

***T***

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TAT	Technical Assistance Team
TFW	Tropical Fresh Water
TFWAFT	Tropical Fresh Water Aft
TFWFWD	Tropical Fresh Water Forward
T/B	Towing Barge

***U***

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UC	Unified Command
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

***V***

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VOSS	Vessel of Opportunity Skimming System
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***W***

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WMD	Weapons of Mass Destruction
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