Summary Notes[1]

Expanding Response Options

A Roundtable Discussion Sponsored by the
Pacific States/British Columbia Oil Spill Task Force
To explore Low-Visibility & Night-time Oil Spill Response Operations

April 11, 2006
San Rafael, California

ATTENDING: In addition to the Speakers and Moderator noted below, the following persons also participated in the Roundtable Discussion: Philip B. Arms, Jr., California Maritime Academy; LCDR Arex Avanni, USCG Sector San Francisco; Ellen Faurot-Daniels, California Coastal Commission; Frank E. Holmes, Western States Petroleum Association; Bill Hutmacher, Alaska Department of Environmental Conservation; Ike Ikerd, Clean Seas, LLC; Robin Jamail, Texas General Land Office; Dan Knowlson, Minerals Management Service; Graham Knox, British Columbia Ministry of Environment; Bud Leland, California Office of Spill Prevention & Response; CDR Anthony Lloyd, USCG Pacific Strike Team; LT Cef Manandic, USCG District 11; Curtis Martin, Hawaii Department of Health; Capt. Roy M. Mathur, California Office of Spill Prevention & Response; Ken Mayer, California Office of Spill Prevention & Response; Judd Muskat, California Office of Spill Prevention & Response; Jon Neel, Washington Department of Ecology; Captain Mike Noonan, California Maritime Academy; Gary Reiter, USCG District 13; Steve Ricks, Marine Spill Response Corporation; LT Rob Roberts, California Office of Spill Prevention & Response; Eric Russell, Aquatic Protection Agency; CDR Scott Schaefer, USCG District 11; Linda Scourtis, Bay Conservation and Development Commission; LT Kevin Sligh, Sr., USCG Pacific Strike Team; Mike Sowby, California Office of Spill Prevention & Response; Gina Sterling, California Office of Spill Prevention & Response; Jordan Stout, NOAA HAZMAT; LTJG Elizabeth Tonovitz, USCG PACAREA; Jeff Williams, Chevron Shipping Co.; Len Woolard, Marin County Sheriff/OES; Mike Zollitsch, Oregon Department of Environmental Quality; and Jim Hardwick, BlueWater & Associates

NOTE: Please reference Appendix I, the Roundtable Agenda, and Appendix II, Speaker Bios

MODERATOR'S OPENING REMARKS: Jean Cameron, Executive Coordinator, Pacific States/British Columbia Oil Spill Task Force

- Ms. Cameron thanked both the speakers and all participants for attending, noting that all attendees are expected to ask questions and offer input on the issues being addressed.
- "This Roundtable offers an interesting opportunity to explore the question of whether spill response technology is capable of supporting on-water response during nighttime or low-

[1] NOTE: This is a meeting summary and is not intended as a verbatim record of all presentations or comments made during the meeting.

visibility operations, and if not, why not? What are the barriers and concerns?" Ms. Cameron said.

KEYNOTE ADDRESS: Dave Byers, Response Section Manager, Washington Department of Ecology

- Dave opened his remarks by describing the Dalco Passage Oil Spill. At 1:30 a.m. on October 14, 2004, a tug captain reported passing through heavy oil in the Dalco Passage area of Puget Sound. A decision was made to send an observation flight up at first light, but the flight was delayed due to fog. The first response assets were mobilized and a Unified Command set up around 8 a.m. By that time, the beaches on Vachon Island had been oiled, and TV cameras were capturing images of enraged or sobbing property owners trying to remove oil by themselves. Calls were being received from ferries and citizens, and a citizen reward of $200,000 was eventually offered for the culprits.
- Not only did this "orphan" 1000 gallon spill generate a great deal of criticism for the Department of Ecology, but it also resulted in establishment of a Puget Sound Oil Spill Advisory Council and legislation establishing a "zero spill policy."
- Other than the delayed beginning, overall the response went pretty well. There were some communications problems, some Geographic Response Plans were not implemented, and access to aircraft for overflights was less than needed. Lessons Learned from this and other responses and drills are available on Ecology's website at http://www.ecy.wa.gov/programs/spills/spills.html .
- The most painful "lesson learned" was that, by not sending personnel to address the situation sooner, the Washington public lost trust in Ecology. Citizens of the state have a "deep social commitment to protection their environmental resources," Dave noted, and have high expectations of their response agencies.
- Ecology now has an agreement with the King County Sheriff's office for access to a plane with radar, and is training aerial observers. Dave also went to Norway to view their 24/7 response technology (vessels with infra-red and radar, air to vessel video links, remotely controlled weir skimmers, and self-inflating boom). Ecology does early and aggressive assessment, and when their teams respond now, he noted that they're described as being "shot out of a cannon."
- Mr. Byers noted that Washington Senator Cantwell has introduced a bill in the Senate – S. 2440 – which would establish a $1 million grant program to develop remote sensing technologies.
- Delays can be expensive by reducing recovery rates, increasing environmental impacts, and undermining public trust. Dave concluded that we need to move to a 24 hour response model in order to improve recovery rates, although he wondered "who picks up the tab." As the Roundtable attendees discussed that question, it was agreed that the Responsible Parties are most likely to do so, but the Dalco Passage spill was an orphan spill, so the state and federal agencies will have to pay for the 24/7 operations in such cases.

CASE HISTORIES

Kim Beasley, General Manager, Clean Islands Council

- Kim explained that Clean Islands Council (CIC) responds in the first two hours of a spill. Their oil spill response vessel (OSRV) can be away from the dock in 45 minutes or less.
- Their assets are coordinated with Geographic Response Plans, and their ocean assets are primarily focused on the Barbers Point Mooring on Oahu. Because the ocean currents at the mooring can be more than 2 knots and will quickly carry the oil towards Kauai, CIC has invested over $20,000 in equipment that will help them respond at night or in bad weather with reduced visibility.
- CIC has invested in radio tracking buoys and infrared cameras. They use the Novatech VHF transmitting Oil Spill Tracking Buoy. These buoys can be dropped from helicopters if necessary, their signals can be programmed to varying frequencies, and their radio signals can be picked up from as far away as 7 miles. These are not the "smart" buoys that send GPS information, but Kim found that those "smart buoys" were too heavy to float with the oil.
- Kim noted that the tenders at the mooring carry these Tracking Buoys and can drop them when needed, or just to provide unannounced training exercises for CIC. Tracking buoys are also carried by the water taxies serving the harbor, by CIC's OSRV, and by helicopters.
- To track the buoys, CIC uses the Taiyo Automatic Digital Direction Finder (ADDF) with both hand-held tracking devices and the Adcock EAQ-351 Triple-Super Heterodyne Receiving System antenna mounted on their OSRV. The price on their ADDFs has dropped from $8,000 to $5,600, Kim noted, and they work with a wide variety of transmitters, including the USCG tracking buoys.
- CIC's infrared Night Sight camera – Model M200W – has pan, tilt, and a wiper, and is remotely controlled by a joy stick. A viewing monitor is located on the bridge, directly above the steering station. The camera was purchased in 1999 for $13, 655; it can distinguish thermal differences within _ of a degree Fahrenheit. Kim also noted that the IR screen imagery can be video-taped.
- The latest version of Night Sight is Model PT 4000M, and costs about $6,900; it can distinguish thermal differences within 1/10 of a degree Fahrenheit.
- CIC has access to two helos; handheld devices can be carried on board to pick up the signals from the tracking buoys.
- Kim showed how the Infra-Red (IR) camera picked up 60-year old bunker sheen around the USS Utah in Pearl Harbor, although once oil cools and disperses, it's harder to pick up on IR, so fast response is crucial.
- Once the equipment was in place, CIC has been able to practice and train with it. Early recovery is cheaper and more effective, Kim noted, and explained that CIC has used the equipment in one spill response.
- In response to a question about sea state limitations, Kim noted that these apply more to the oil recovery equipment than to the tracking buoys and IR cameras.
- Asked whether IR can be used for mapping a spill, Kim explained that other technologies are more suited to spill mapping.
- To access Kim Beasley's PowerPoint, email JeanRCameron@oregoncoast.com.

Doug Lentsch, General Manager, Cook Inlet Spill Prevention and Response, Inc. (CISPRI)

- Doug explained that Cook Inlet, Alaska is a very dynamic environment. The tidal change can be close to 40 feet, with a high tide at one end of the Inlet and low tide at the other. Silt, rip tides, dynamic ice, -30 degree temperatures, and currents are all challenges to spill response, so CISPRI personnel have learned to work with, not against, these dynamics.
- The oil infrastructure in Cook Inlet includes pipelines, refineries, platforms, and tanker docks.
- During the winter there are only 4-5 hours of daylight and the added dynamic of ice; ice pans can be 150 meters long and a foot thick. Considering these conditions, CISPRI only uses its large vessels during winter responses; these include three OSRVs, one of which is capable of towing tank vessels. Their smaller response vessels are used in the summer. These larger vessels are safer under winter conditions, and provide enough space for two shifts of response personnel.
- CISPRI has adapted tracker buoys for the icy conditions. They also use both vessel-mounted and hand-held IR cameras, although Doug noted that IR can be "challenged" by ice conditions. Handheld IR sensors have many uses, such as checking how much product is left in tanks, or to spot shorts in an electrical system, Doug noted.
- The vessel-based IR sensor detected a thin sheen of pressurized hydraulic oil from a production platform release from a mile away during conditions of darkness and cold weather. It was also used during the *SeaBulk Pride* grounding to determine that no oil had been spilled from the vessel.
- These tools all work well, Doug stated and the equipment pays for itself. OSROs just need to practice and plan for 24-hour operations, which include crew relief, berthing, and meals – as well as a warm-up location. His primary concern during night operations – or anytime – is crew safety. His secondary concern is not to damage equipment.
- Asked whether drone aircraft fitted with IR could be useful, Doug noted that drones can carry either IR or digital cameras, but their range and weather conditions limitations were such that he doubted their usefulness in Cook Inlet. He noted that they could be useful onshore, particularly with pipeline and facility security.

REMOTE SENSING TECHNOLOGY: Dr. Merv Fingas, Chief, Emergencies Sciences Division, Environment Canada

- Regarding the visibility of oil for tracking purposes, Dr. Fingas noted that it depends entirely on the oil's thickness and type, as well as weather conditions. Thin oil is not often visible, whereas thick oil – especially heavy fuel oil and crude - is visible under most circumstances. He also noted that discharges from ships are only visible under optimal viewing conditions.
- False targets - such as wind shadows, natural oils, whale and fish sperm, calms, etc. - can cause visibility problems. Light oils such as diesel may have thickness differences. Generally, darker oils are more visible than light oils or rainbow sheens.
- Oil spill detection has largely been carried out by aerial visual surveillance since the 1970's, although some countries now use small surveillance aircraft equipped with IR and Side-

looking Radar (SLAR). Still, he noted, many operatives rely only on visual detection and cameras for documentation.

- The problem is that visual cannot identify and correlate data, and is not effective in fog or darkness. Often the extent of a spill may be too great to map manually. Visual detection is also complicated by the fact that that oil cannot be seen because it's too thin or because it's colored the same as nearby backgrounds, such as weeds and ice, or oil is in small pancakes or on the shoreline.
- Optical Sensors include cameras and scanners in IR, Visible and UV; these generally suffer from the same limitations as visible sensors, although they're relatively cheap and readily available.
- Among the airborne sensors, Dr. Fingas noted, the first emphasis was on Infrared (IR) and IR/UV, as well as visible cameras, scanners, sensors and SLAR – Side-Looking Airborne Radar. Laser flourosensors are still under development.
- SLAR and SAR utilize passive microwaves; they don't 'detect' oil so much as they detect the damping effect of oil on waves at certain wind speeds. Their primary limitations are: 1. they only work in surface winds of about 3 to 15 knots (2 to 7 m/s); and 2. They're subject to numerous interferences.
- The principle of Laser Fluorosensors is that a UV laser activates oil which then gives off light (fluoresces) in the visible - spectrum characteristic of oil. This allows for a positive indication of oil and can give class information such as whether it's a light or heavy oil or lubricant. Laser Fluorosensors can also discriminate fresh crudes accurately; it's like performing chemical analysis from the air, Dr. Fingas noted. Laser Fluorosensors can provide a fluorescent spectrum of oil for forensic purposes, and can be coupled with GPS and GIS information to provide forensic references.
- Regarding the use of satellite sensors, he noted that attempts to use the visual spectrum from early satellites had not been successful, since it often took weeks to 'find' even a known oil spill. New radar satellites offer great potential – but have limitations as well as advantages.
- Radar satellites offer good potential, he noted, but have severe limitations as well. Radar satellites detect calm spots, not oil, and calm spots are caused by many things. More application of airborne sensors would be useful, he thought; they have exceptionally-high, but unused capability. The advantages of radar satellites are that they can give you the big picture, they're relatively cheap, they're night capable, and the data can be downloaded and used from an office.
- Scanning Laser Environmental Airborne Fluorosensor (SLEAF) uses a 100 mJ eximer laser capable of scanning at two widths in real time. The electronic analysis system was designed by Environment Canada and is now operative. With this tool, individual fluorescence spectra can be analyzed for the presence of oil, which can then be classified as light refined, crude, or heavy refined. The extent of coverage is depicted as Clean, Light, Moderate, or Heavy.
- Oil contamination (for an average of 50 meters on both the port and starboard sides of the aircraft) can be depicted on a map as lines perpendicular to the flight path; the map is geo-referenced, scaleable and faxable. Down-looking annotated video (includes oil type and

coverage) is also used. These new systems provided detailed forensic-useable information, including spectra, operating parameters, time, exact location, aircraft factors, etc.

- Dr. Fingas noted that recent spill events have created a renewed interest in being able to detect submerged and neutrally buoyant oils and related petroleum products such as Orimulsion. Several modern laser fluorosensors (LFs) have range-gated detection systems which allow the detector to be "turned on" precisely when fluorescence spectral return is expected. Therefore, they can be range-gated to look into the water column to view fluorescence emitted from a submerged target.
- Dr. Fingas stated that optical sensors include cameras and scanners in IR, Visible and UV. These generally suffer from the same limitations as visible sensors, he noted, but are relatively cheap and readily available.
- Regarding infrared, the best are the 8-12 m sensors, which give relative thickness; this is most useful for countermeasures such as skimmers or dispersants. These are sometimes combined with UV for the total slick picture.
- Microwave Sensors include radars (SAR and SLAR) and passive microwave scanners, so are subject to the same limitations on radar noted above. The major advantages of microwave are its capability to "see" in dark or fog, to operate at high altitude, and it's useful for large slicks and very rapid mapping. The disadvantages include operational limitations plus high cost for a dedicated aircraft and crew, the fact that it can generate false positives, and may only detect thicker oils, and it cannot 'see' into a vessel's wake.
- Dr. Fingas summarized that only Fluorosensors give positive indication of oil, and can detect thick slicks. Other sensors can be helpful for mapping, and radar is useful for thick, large spills but subject to many limitations and interferences. He went on to provide examples of oil spill remote sensing from Environment Canada's Laser Fluorosensor demonstration flights.
- Dr. Fingas concluded that remote sensing is still an emerging science; all sensors have limitations, and understanding these is important. He predicted that laser fluorosensors would have great utility in the future.
- Dr. Fingas agreed with a suggestion from the audience that more observers need to be trained to use these technologies. He also responded to a question regarding the availability of Environment Canada's SLEAF equipment by noting that it could be utilized in spills in U.S. waters under mutual aid agreements, but its availability would be a function of mobilization and travel time.
- To access Dr. Fingas's PowerPoint, email JeanRCameron@oregoncoast.com.

24/7 RECOVERY SYSTEMS: Bendt Nilsen, General Manager, Frank Mohn Houston Inc. [2]

- Mr. Nilsen explained that Frank Mohn – or Framo - is a pump company that begun development of oil skimming equipment as a result of oil exploration and development in the North Sea. With offices worldwide today, they specialize in pumps for marine and offshore applications.

[2] Ms. Cameron noted that the Oil Spill Task Force does not endorse products, and that Mr. Nilsen was invited to describe an example of 24/7 recovery equipment available on the market today.

- Since operations in Norway often include cold and dark conditions like those in Alaska, operational capability must be 24/7. Frank Mohn also emphasizes safety, so their equipment focuses on keeping personnel off ships' decks in such conditions.
- For instance, vessels operated by NOFO, the Norwegian spill response organization, can automatically deploy boom from vessels – no manual deployment on deck is necessary. In addition, skimmers can be recovered for cleaning and maintenance through "hangers" below decks, with the result that crew are not dealing with slick surfaces on the ship's deck.
- The Frank Mohn skimmers can be remotely operated from a ship's bridge, and can operate up to 100 yards feet from the vessel. They can also be skirted to float with the oil slick like a tracker buoy and thrusters can be installed. The skimmers have self-adjusted mechanisms to compensate for wave height.
- In addition, they can monitor oil thickness and the rate which the oil/water mixture is being pumped in; both capabilities allow the operator to stay with the thickest oil. This is coordinated with a ship having a radar system for detection of oil even during low visibility conditions. He noted the need for software to interpret radar information.
- Mr. Nilsen explained that the Frank Mohn skimmers are engineered for recovery of either low/medium viscosity or for high viscosity oils in cold environments.
- He concluded that "Technology today can recover oil from the sea surface as long as there is oil on the sea surface, independent of weather and waves. Skimmers are available for all viscosities, and all functions should be remotely controlled." Safety on deck means "No people on deck" Mr. Nilsen concluded.
- To access Bendt Nilsen's PowerPoint, email JeanRCameron@oregoncoast.com.

OPERATIONAL ISSUES

Richard Wright, Pacific NW Region Vice President, Marine Spill Response Corporation

- Mr. Wright opened his remarks by noting that, although night operations are possible, safety is the primary concern. For example, he explained that productivity declines after a person works about eight hours, and if work continues during the body's normal "down time" the risk of accidents is increased. Additionally, exposure limits for chemicals are based on eight hour working periods. Thus, increasing working time and reducing recovery time significantly increases overall risk.
- Mr. Wright also pointed out that no artificial light is the same as daylight, and artificial lights can introduce additional risks since they can enhance shadows or their glare can temporarily blind workers, thus increasing risks of slips, trips, and falls from uneven working surfaces in unfamiliar conditions.
- He also expressed concern regarding shoreline operations at night or in thick fog. He noted that such operations may be necessary due to tidal dependent access issues as well as approaching weather. However, labor-intensive efforts combined with unfamiliar surroundings, common with shoreline operations, give rise to higher potential for human error and injuries.
- The Unified Command, with advice from the Safety Officer, Operations, and Planning will discuss the advantages and disadvantages of continuing operations throughout the night and

then make a decision. He also noted that ineffective operations shouldn't be undertaken if the risks outweigh the benefits, but acknowledged that there could be political benefits to being seen as taking some action rather than none.

- Mr. Wright listed MSRC's Nightsight Infrared-equipped Vessels as including the Shearwater, the Cormorant, the Arctic Tern, the Aleutian Tern, the Royal Tern, the Western Gull, and the Plover. All their major skimmers and the larger workboats also have high intensity lighting, and all vessels have lesser intensity lighting.
- Mr. Wright noted that on-water recovery efficiency will be drastically reduced if the recovery vessels are unable to stay in the heaviest concentrations of oil. Although vessels have high-powered lights, the crews may only be able to see 100 yards or less around them. Vessels are not good search platforms due to low "height of eye", he explained. Aircraft equipped for appropriate remote sensing are necessary.
- He also noted that, while vessels may not be good search platforms, they can be important to crew livability. Recovery vessels equipped with crew accommodations might also provide accommodations to smaller vessels without crew support. 24-hour operations are only effective if the response crews can maintain contact with the oil, so they should be able to stay with it for multiple days and that means places for sleep, dining, bathing, and relaxing between shifts.
- Mr. Wright concluded that, while night operations are possible, safety is absolutely the primary consideration, and adequate remote sensing aircraft is the key to success.
- To access Richard Wright's PowerPoint, email JeanRCameron@oregoncoast.com.

<u>Richard Fredricks, Executive Director, American Salvage Association</u>

- Mr. Fredricks explained the development of the American Salvage Association, which grew out of a meeting of nine salvage companies with U.S. Coast Guard RADM Robert North, who wanted an update about salvage capability in the U.S. The nine companies, very competitive by nature, learned that they had mutual interests and decided to form the American Salvage Association (ASA) to represent those interests.
- There are sixteen contractor members of the ASA, and these sixteen companies perform 98% of all salvage operations in the U.S. There are also a number of associate members, which include all retired US Navy Supervisors of Salvage, many retired USCG Admirals, and a number of distinguished commercial consultants, engineers and vendors.
- Mr. Fredricks noted that salvage operations have evolved from those focused on saving vessels and goods to those which prioritize keeping pollutants out of the environment. In 2005, he noted, international salvage operations prevented 875,000 tons of pollutants from being released.
- With regard to nighttime operations, he noted that safety is the primary concern. With that in mind, salvage operations are done in daylight whenever possible, although they can be and have been conducted at night as well.
- Mr. Fredricks concluded by briefing the audience on the status of the U.S. Coast Guard's current rulemaking on Salvage and Firefighting, as well as the importance of using qualified, legitimate salvage contractors. He stated that current tank vessel oil spill contingency plans

list 350 salvage contractors, 390 lightering contractors, and 242 firefighting contractors, although there aren't that many worldwide! The USCG needs to include salvor standards in its rulemaking in order to address this problem, he stated.

Tom Bartlett, Western Regional Response Manager, National Response Corporation

- Mr. Bartlett addressed the topic of spill response in low-visibility conditions by referring to his participation on the *Athos I* spill on the Delaware River, where 1900 personnel were deployed in the field, and where on-water night operations were conducted when possible during the first two-three weeks of the response.
- Noting that shoreline debris can create hazardous working conditions at night, he also noted that near-shore operations presented risks, since winds, tides, currents, and fog conditions could change rapidly. Such rapidly changing conditions could be risky on open water as well, and risk factors are greatly magnified, especially with man-overboard issues, in darkness.
- However, in a well-lit, controlled, sheltered-waters nearshore environment with stable work platforms, cleanup may be conducted safely and with minimal risks to responders.
- It is critically important that unannounced "man overboard" drills be conducted, especially in preparation for night operations. It's also valuable to have a "mother ship" to escort smaller vessels to/from staging areas.
- Mr. Bartlett pointed out that shift changes should be done prior to onset of darkness to allow the incoming personnel to set up and adjust to lighting condition changes prior to darkness.
- He further noted that there are many night operations that can be safely conducted to support oil spill operations. This includes preparation for the following morning's operations, logistical organization of work crews, equipment maintenance and repair, refueling and decontamination. Night operations such as these are vital and necessary to the success of any oil spill operation.
- Asked whether 24-hour operations put any special strains on the ICS structure, he noted that there might be more opportunities for miscommunications between Unified Command and field operations regarding outdoor conditions, especially in widely dispersed response zones.
- To access Tom Bartlett's PowerPoint, email JeanRCameron@oregoncoast.com.

Brad Hahn, President and General Manager, Alaska Clean Seas

- Mr. Hahn opened his remarks by describing Alaska Clean Seas (ACS), noting that they respond to every spill in the Prudhoe Bay oil field, even those below reporting thresholds. ACS has 61 full time personnel and approximately 50 million dollars invested in spill response equipment.
- He also noted that they're accustomed to 24/7 operations as well as working in darkness, since the North Slope has total darkness from November 18th to January 23rd. To balance that, however, they have total daylight from May 10th to August 2nd.

- ACS has fleet of small response vessels capable of working in the shallow waters off the Slope, which may be only 30' deep up to six miles offshore. They can respond to open water spills free of ice from early July through mid-October.
- ACS uses160 mobile flood lights to "light up the night," Mr. Hahn explained. However, conditions can still be dangerous as a result of slick ice and oil as well as glare and shadows.
- Their response boats are equipped with large lights – Mr. Hahn plans to reevaluate their effectiveness this year – as well as tracker buoys and infrared. On-water response can be complicated by high waves and cold temperatures.
- ACS also has access to a small fixed wing airplane for infrared over-flights.
- ACS works two 12-hour shifts during larger spill responses, so manpower requirements are their biggest issue. On the issue of night versus day start-up, Mr. Hahn said the real issue is ensuring that you have adequately trained staff who can cover 24 hour operations for extended periods.
- While night operations are certainly possible, Unified Command has to be willing to shut them down when weather conditions or other factors present too much risk.
- An audience member asked why spill responders can't work at night as fishermen do – Mr. Hahn noted that they can and they use similar lighting strategies. The difference is that response personnel have the added challenge of seeing the oil at night in order to be effective in their skimming opoertions.
- To access Brad Hahn's PowerPoint, email JeanRCameron@oregoncoast.com.

THE PLAN HOLDER'S PERSPECTIVE

Dave Sawicki, Director, Crisis Management & Emergency Response, BP West Coast Operations

- Mr. Sawicki pointed out that oil spill events usually happen at 3 a.m. on a holiday weekend, in the fog and at the intersection of 4 maps!
- Those in Unified Command and other ICS positions must plan for 24 hour operations as part of the response planning cycle. Other working assumptions for that cycle are that the ICS meeting schedule will be maintained, that necessary staff and equipment are available, and that safety is the #1 priority.
- Unified Command should request a night operations plan beginning on Day 1. It should also be understood that night operations and plans require attention to details, so the Incident Management Team should develop primary & alternate strategies to meet objectives (ICS 215) as well as detail the logistical needs (ICS 204s) for both day & night operations.
- He also noted that it's imperative for safety reasons that those at the Command Center be able to communicate with responders in the field. He also noted the importance of training for transitions when shifts change.
- Mr. Sawicki pointed out that wildlife is more likely to come out at night, thus increasing their exposure if no removal operations are in place. He further noted that his company wants the oil out of the environment and into a tank so they can sell it!
- With regard to the issue of aerial surveillance, he commented on the lack of qualified helicopter operators.

- Mr. Sawicki closed by noting that achieving net environmental benefit is a matter of balancing reward and risk with safety at the center.
- To access Dave Sawicki's PowerPoint, email JeanRCameron@oregoncoast.com.

Eric Haugstad, Manager, Contingency Planning & Emergency Response, Tesoro Corporation

- Mr. Haugstad declared that safety is first and foremost in any response, and that it must be understood that there may be times when, based on environmental conditions, monitoring the situation is the safest and only response. Unified Command will make these decisions.
- He noted that the right kind of lighting provides good support for night-time response. While his company, in conjunction with their contracted OSRO's, purchased dedicated equipment such as infrared cameras, tracking buoys, and lighting to effectively track and cleanup oil at night, it must still be remembered that use of this equipment should occur only when it can be done safely.
- With regard to training, Mr. Haugstad stressed the importance of training responders in the effective use of tracking equipment, as well as providing training in vessel operations (charts, radar, and tides), communications (establishing regular radio check-in times), and survival equipment (having it and USING it).
- To access Eric Haugstad's PowerPoint, email JeanRCameron@oregoncoast.com.

OPEN DISCUSSION

- When asked "who pays for the technology?" the industry panelists replied that the oil industry would share the costs with OSROS, since the public has an expectation that response should be fast and effective. Government agencies should look for ways to partner with the oil and response industries to address equipment needs.
- Eric Haugstad noted that orphan spills present a problem, since government agencies must assume all response costs in that situation.
- Curtis Martin stated that, when it comes to 24/7 response, he believes that it must be planned for and the capability must be there.
- Effective response is most critical during the first 24-36 hours of any spill, no matter what time of day/night it occurs.
- As for personnel, transitioning from a 40-hour week to a 24/7 response is a challenge.
- Jean Cameron asked whether 24/7 response would require more equipment; OSRO representatives replied that the equipment can run 24/7 – it doesn't need a rest!
- One participant noted that OSROs and responders are not all created equal; with that in mind, we might want to use our best operators at night, but from an efficiency point of view, we might want the best operators working during the day. Unified Command would have to weigh removal goals against safety issues in situations where the skills of on-site responders vary.

- Jean asked whether contingency plans should include plans for night time operations. LCDR Lloyd of the Pacific Strike Team recommended that every Area Committee should include this in their Area Plans.

Appendix I

Expanding Response Options

A Roundtable Discussion Sponsored by the Pacific States/British Columbia Oil Spill Task Force To explore Low-Visibility & Night-time Oil Spill Response Operations

April 11, 2006

Four Points Sheraton Hotel, San Rafael, California

7:30	Registration Opens	
8 a.m.	Welcome and Introductions	Jean Cameron, Oil Spill Task Force
8:10	Keynote Remarks	Dave Byers, Response Section Manager Washington Department of Ecology
8:30	Case Histories	Kim Beasley, Clean Islands Council Doug Lentsch, Cook Inlet Spill Prevention and Response, Inc.
9:20	Remote Sensing Technology 24/7 Recovery Systems	Dr. Merv Fingas, Environment Canada Bendt Nilsen, Frank Mohn Houston Inc
10:15	Break	
10:40	Operational Issues	Richard Wright, Marine Spill Response Corporation Richard Fredricks, American Salvage Association Tom Bartlett, National Response Corporation Brad Hahn, Alaska Clean Seas
11:55	The Plan Holder's Perspective	Dave Sawicki, Director, Crisis Management & Emergency Response, BP West Coast Operations Eric Haugstad, Manager, Contingency Planning & Emergency Response, Tesoro Corporation
12:25	Open Discussion	Jean Cameron, Moderator
12:50	Summary & Adjourn	Jean Cameron, Moderator

Appendix II

Speaker Bios

Dave Byers is the Response Section Manager with the Washington State Dept. of Ecology Spills Program. As such, he is responsible for coordinating the agency's response to oil and hazardous materials spills statewide, including the agency's responsibility for removing chemicals associate with methamphetamine laboratories.

Ecology's response team includes 28 full-time responders that operate out of 5 offices statewide, respond to over 3,800 spill reports each year, and mobilize response teams to 2,000 spills a year.

Prior to joining Ecology about 5 years ago, Dave supported EPA Region 10 as the Program Manager for their hazmat response team.

At Ecology, Dave is also the agency's representative to the State Committee on Homeland Security and Agency Liaison for disaster response. In his free time, Dave serves his community volunteer fire department as Assistant Chief of Operations where he is responsible for coordinating fire, EMS, and marine rescue activities.

Kim Beasley graduated from the University of Hawaii with a BA in Geography with a Marine Options Certificate and advanced studies in urban planning.

Kim's early career paths included commercial diving, dive shop manager, SCUBA tourism and instruction, finish carpentry (yachts), and research and speech writing among others.

He worked for Chevron at the Hawaii Refinery for 14 years beginning as an operator, advancing to technologist in the engineering department. His responsibilities included all technical (engineering) support for the pipelines, boiler plant, tank farm, offshore tanker mooring, on-plot and off- plot oil response and recovery.

Kim left Chevron to become the General Manager of the Clean Islands Council in 1991, accruing 15 years of experience in spill preparedness and response for the Hawaiian Islands.

Doug Lentsch has been the General Manager of Cook Inlet Spill Prevention & Response, Incorporated (CISPRI) since 1995.

Cook Inlet is a very robust waterbody with environmental conditions that include tidal ranges greater than 30 feet, three rips, currents that frequently exceed 5 knots, seasonal dynamic moving ice, and long hours of light and/or darkness.

Prior to his employment at CISPRI, Doug spent 25 years in the U. S. Coast Guard, with the majority of his career in the Marine Safety field.

A significant amount of that time was spent in environmental protection, including a tour at Coast Guard Headquarters where he was the Chief of the Pollution Response Branch during the Exxon Valdez and about a dozen other major oil spills. He was active in the development of the Oil Pollution Act of 1990.

Doug was raised in Montana and attended Montana State University where he received a Bachelors degree in geology.

Merv Fingas is Chief of the Emergencies Science Division of Environment Canada. This division is responsible for performing research on oil and chemical spill behaviour and analysis. He manages 15 other scientists and staff studying various aspects of oil and chemical spills.

Mr. Fingas has a PhD in environmental physics from McGill University as well as three masters' degrees; one in chemistry, one in business and another in mathematics, all from University of Ottawa.

Dr. Fingas's specialities include; spill dynamics and behaviour, spill treating agent studies, remote sensing and detection, in-situ burning and the technology of personal protection equipment. He has devoted the last 30 years of his life to spill research and has over 650 papers and publications in the field.

Dr. Fingas is a member of several editorial boards including editor-in-chief of the Journal of Hazardous Materials, the leading scientific journal covering chemical fate, fate, behaviour and countermeasures. He has served on two committees on the National Academy of Sciences of the United States on oil spills including the recent 'Oil in the Sea'. He is chairman of several ASTM and governmental committees on spill matters.

Bendt Nilsen has served as General Manager for Frank Mohn Houston, Inc, since 1995. prior to that he served as their Assistant Service Manager in Bergen, Norway for eight years, and prior to that was the Frank Mohn Corporation's representative for sales and service in Kobe, Japan from 1981 to 1987.

Mr. Nilsen began his career with the Frank Mohn Corporation in 1979 in their design department, specifically the automation section.

Mr. Nilsen received a degree from the University of Bergen, Norway in Science / Math in 1977 and a degree in Electronic Engineering from the NKI Technical College in 1979.

Richard Wright is the Pacific/Northwest Region Vice President of the Marine Spill Response Corporation. He has served in this position since the April 1, 2005, merger of Marine Spill Response Corporation (MSRC) with Clean Sound Cooperative, Inc.

MSRC Pac/NW Region encompasses the States and marine areas of Washington, Oregon, and Hawaii. Operational sites are located in Port Angeles, Bellingham, Anacortes, Everett, Seattle, and Tacoma, WA; Astoria and Portland, OR; and Honolulu and Hilo, HI. MSRC, the largest oil spill response organization in the country, was founded in 1990.

Prior to MSRC, Mr. Wright was President and CEO of Clean Sound Cooperative, Inc. for four years.

A graduate of the U.S. Coast Guard Academy, Mr. Wright also has a M.S. in Management Science from the U.S. Naval Postgraduate School. Highlights of his 27-year career in the U.S. Coast Guard include serving as Commanding Officer of Coast Guard Cutter CAMPBELL, Commanding Officer of the Puget Sound Vessel Traffic System, Head of the Professional Development Department at the U.S. Coast Guard Academy, and Director of Intelligence, Office of the Secretary, U.S. Department of Transportation.

Upon his retirement from the U.S. Coast Guard in 1993, he established a regional office in Seattle for Tesoro Environmental Products Company. He then served as Environmental General Manager for Time Oil Company in Seattle, before being selected to become President of Clean Sound.

Richards Fredricks serves as the executive director of the American Salvage Association (ASA), and manages the affairs of the Association from its offices located in Arlington, Virginia.

Separate from his responsibilities to the ASA, Dick continues his long relationship with SMIT Salvage for which he now serves as a consultant operating from offices in Annapolis, Maryland. Dick also serves as Vice President – Marketing and Sales for Donjon-SMIT, LLC, an OPA-90 Alliance operating from offices located in Alexandria, Virginia.

Finally, Dick serves as president of Maritime Solutions, Inc., headquartered in New York City, a company whose mission is to promote innovative products and shipboard systems that provide more effective solutions to traditional marine and environmental problems.

Dick is a graduate of the United States Merchant Marine Academy, Kings Point, New York; the U.S. Navy Diving and Salvage School, Washington, DC; and the New York University Graduate School of Business Administration, New York, New York.

Tom Bartlett, Regional Response Manager for the National Response Corporation
Mr. Bartlett's past experience involves both national and international Oil spill response. Tom has responded to spills in the Gulf of Mexico, Mississippi River system, East Coast Inlands waters the West Coast, and International waters.

He has extensive knowledge of the Incident Command System and has filled positions in the Operations and Logistics Sections on numerous spill responses.

Mr. Bartlett is a California State Certified Hazardous Materials Technician and has over 14 years of experience with Hazmat and Emergency Response Management.

He is an experienced responder to oil and chemical releases to both land and water.

Key specialties include oil spill response and training, facility hazardous waste materials response, railcar safety, truck rollovers and most recently Marine Salvage management.

Brad Hahn has over 20 years of experience in planning, managing and implementing spill response programs in the State of Alaska.

For the last four years, he has served as President and General Manager of Alaska Clean Seas, which is the oil spill response cooperative for the North Slope of Alaska.

Previous experience includes over 17 years with the State of Alaska and 3 years as a private consultant.

Brad has written oil spill contingency plans, managed the State's Spill Response Program, and served as the State's On-Scene Spill Response Coordinator.

Dave Sawicki is BP's Director for Crisis Management and Emergency Response in the Western US. Mr. Sawicki has been directly involved in crisis and emergency response planning and incidents for over 13 years.

He has worked in 14 states and 22 countries. Incidents to which he has responded include those caused by hurricanes, landslides, vehicle rollovers, civil unrest, fires and oil spills.

He presently provides crisis and emergency response services to BP's assets along the west coast, including refineries, pipelines, terminals and shipping entities.

Eric Haugstad is Manager of Contingency Planning & Emergency Response for the Tesoro Maritime Company. He joined Tesoro as Manger of Contingency Planning in 1996, and was named Contingency Planning & Emergency Response Manager in 1998.

He provides overall compliance with State and Federal Regulations and insures response capability for all of Tesoro assets.

Mr. Haugstad has been involved with oil spill response and spill co-ops since 1983 and is currently involved with CISPRI in Cook Inlet, serving as Present of the Board of Directors; MPA Marine Preservation Association, as Board of Director (Alternate); and with SEAPRO.

He also sits on various industry groups such as, Prince William Sound Shippers, WSPA, MPA DAS and MEC workgroups as a Tesoro Representative. In his daily activities he oversees Tesoro's Assets at the Refineries, Terminals and Pipelines.

Eric Haugstad has responded to some of the more notable incidents, including

- the *T/V Glacier Bay* Spill in Cook Inlet;
- the *Exxon Valdez* spill Prince William Sound Alaska;
- the Great Plains Pipeline spill in North Dakota;
- the Captain Cook Pipeline Release on the Kenai Peninsula in Alaska;
- a Single Point Mooring Release in Hawaii; and
- the *Seabulk Pride* Grounding in Cook Inlet Alaska.

Eric Haugstad received his response training from the Texas A&M Oil Spill School; Oil Spill Response Limited in London; Al Allen's Oil Spill Training Courses; and Clover Park Vocational in Tacoma Washington.