Incident also occurs in the conference room!
Needs for Incident Command System in Japan

Takahiro Hagihara
Director, Disaster Prevention Department
Maritime Disaster Prevention Center

Introduction

This symposium occupies an extremely important position in terms of improving and strengthening Japan's response to oil spills, and I would like to express my appreciation to the Petroleum Association of Japan and everyone else involved for their efforts. The Maritime Disaster Prevention Center (MDPC) operates on the frontline of oil spill cleanup activities in times of emergency, and in normal times is directly involved in the education and training of land and sea disaster prevention personnel. The focus of this international symposium on preparing for major oil spills is therefore very relevant to MDPC, and the opportunity to speak is greatly appreciated.

The Maritime Disaster Prevention Center (MDPC)

When oil spills occur off the coast of Japan, the cleanup is addressed from two positions. The first is that of the polluter—for example, shipowners and coastally-located petrochemical companies. The second is the government position, including the state and local authorities. MDPC operates more than 98 percent of the time from the position of the former—namely, the Responsible Party (RP).

Under Japanese law, including the Act on the Prevention of Marine Pollution and Maritime Disaster and the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities—referred to below as domestic law—the primary responsibility for the cleanup lies with the polluter. The scope of that responsibility is recognized as including, for example, the obligation to take emergency measures, the obligation to engage in cleanup measures, and the obligation to provide assistance and cooperation.

If the polluter can use the equipment which it is legally obligated to have on board and deal with the incident using its own disaster control organization, that's great. However, in cases where, for example, it is difficult for the crew on a tanker which has run aground to use boomand dispersant which the tanker has on board to clean up the spreading oil, or where oil spilled from an onshore facility has spread right across the port, the problem becomes more complicated, including coordination with local parties.

In such cases, in response to a request from the RP (shipowner, petrochemical company, etc.), MDPC concludes a contract with that RP on maritime disaster response measures. Then, in case of an oil spill, we launch cleanup measures, and in the case of spills and fires involving highly combustible or highly toxic hazardous substances—so-called Hazardous and Noxious Substances, or HNS—takes countermeasures that include confirming safety of the site and extinguishing fires.

MDPC's work isn't restricted to dealing with oil spills. In Japan, the definition of "maritime disaster" includes spills of oil and toxic liquid substances into the sea, as well as fires at sea. MDPC consequently deals with maritime disasters at the site from the position of the RP and on behalf of the RP, with whom primary responsibility lies. Since 1976, we have dealt with 143 maritime disasters, most of them oil spill cleanups.

When the polluter does not take appropriate cleanup action, or when the situation is regarded as too urgent to wait on action from the RP, under the direction from the Commandant of the Japan Coast Guard, MDPC transforms from a private-sector organization into a state institution, and on behalf of the state engages in so-called "substitute for administrative substitute execution." In other words, MDPC carries out the state's work on its behalf. There have been 13 such cases so far, but primarily between the time that MDPC was founded through to the early 1980s. In more recent years, factors such as P&I insurance being made compulsory have set in place conditions much more conducive to proper cleanups, so MDPC has very seldom had to act on behalf of the government.

So on some occasions, MDPC is required to act on behalf of the government. Usually, however, MDPC has the nature of an RP-side private-sector organization, as it were—

cleaning up spills from the position of the polluter. Because of this, MDPC is a financially independent corporation which has never received a management expense grant—in other words, operating funds—from the government. Moreover, we operate on a not-for-profit basis. Donations received from our various voluntary activities are used to improve cleanup equipment and stock up on the special fire-extinguishing foam which is effective against fires from HNS spills, helping to improve and strengthen Japan's maritime disaster response capabilities.

While MDPC might receive no management expenses grants from the government and operate on a not-for-profit basis, we are not without income. When we do not deal with emergencies, we keep MDPC afloat through activities such as the following.

(1) In place of the owners of oil tankers and HNS tankers, who are obligated under domestic law to deploy cleanup equipment as well as disaster responsepersonnel, MDPC puts the necessary equipment and personnel on standby for provision in case of emergency, and issues certificates to that effect;

(2) We provide education and training for crew on tankers carrying hazardous materials pursuant to the STCW Convention;

(3) We undertake maritime disaster prevention-related survey and research, such as evaluating the performance of oil skimmers; and

(4) We are commissioned by businesses to prepare contingency plans, conduct various types of training and provide consulting services.

In case of emergency, MDPC works on a best-effort basis to obtain local consensus on the content of Incident Action Plans and the completion of cleanup activities, planning and implementing efficient and effective response and cleanup operations with a balance among environmental, economic and policy factors.

If MDPC were to lose sight of that non-profit perspective, local parties might wrongly feel that we were operating for the sake of profit and deliberately dragging out cleanup operations in order to make money. In that case, we would lose their confidence and cleanup work might cease to function so smoothly.

MDPC has a staff of around 30 and only two large-scale fire-fighting ships. It would only be natural to wonder if we could possibly cover all of Japan with such scant resources at our disposal. If we took on a large number of branches, ships and staff, our maintenance costs would soar. Instead, in key ports we conclude pre-contracts with port-related private firms engaged in tug boat, port and warehouse services (below, "subcontractors"), paying them a management fee to store and maintain MDPC booms, oil skimmers, protective equipment and fire-fighting equipment. We also provide education and trainingto maintain and improve our response system(by paying them a commission).

Taking advantage of the current IT technology, we have also built an incident response support system which, for example, confirms duty staff and ships on a daily basis, automatically transmits photographs of incident sites to MDPC headquarters and, conversely, sends data from headquarters to incident sites, ensuring that we are ready 24/7 to mobilize in Tokyo Bay, Ise Bay and the SetoInland Sea.

MDPC needs to strengthen its partnership with subcontractors in key ports and, in the event of an incident, deal with maritime disasters on behalf of RPs while working to build local trust. As a professional maritime disaster response group, MDPC is convinced that preparation during normal times is critical in determining the success of responses atthe times of emergency. Here I would like to discuss the maritime disaster response at the time of the Great East Japan Earthquake on March 11 last year as an excellent example.

Response to maritime disasters following the Great East Japan Earthquake

MPDC responded proactively to the various maritime disasters occurring from March 11 onward. We voluntarily sent our two large chemical firefighting ships to deal with the LPG tank fire that broke out in a coastal refinery in Chiba Prefecture, being the first to spray water on to the burning tanks from the ships to successfully prevent the spread of fire and localize the blaze. For the first two hours, MDPC was fighting the fire alone.

This was truly a fire-fighting activity from the position of the RP. From the standpoint of the state, the Fire Service and the Japan Coast Guard served a public role in responding to the tsunami strike. MDPC, mobilizing voluntarily from the RP position, found out about the outbreak of the LPG tank fire from the TV broadcasts while the aftershocks continued.

In the live TV footage, flames were pouring out of the facility toward the sea, but the weather map suggested that a change in wind direction in the evening could cause the fire to spread from the sea toward the refinery tanks.

The company involved and MDPC already had in place a pre-plan in case of a maritime disaster, addressing the possibility of spillage of oil and other substances and outbreak of fires at the refinery, and we had also concluded a pre-contract—voluntary rather than legal—that committed MDPC to action in the event of a request from the company. In this particular case, because we had a blueprint showing details such as the distance of the burning tanks from the quay, the size, the form of the quay and water depth, as well as an IAP, we were sure that given the water deliverable distance of MDPC ships—over 120 meters in windless conditions, with the main cannon capable of delivering 18,000 liters per minute—if we could spray water from the direction in which the wind was blowing, it would reach right to the back of the tanks and help to prevent the fire from spreading. Therefore, without waiting for a mobilization request from the company, we ordered our personnel into action.

We put three staff from MDPC headquarters in Yokohama on to the firefighting ships and sent them off toward the site. (The warehouse at headquarters always has firefighting Go Kits, HNS Go Kits and oil spill Go Kits on standby.)

Liaising and coordinating with the Ichihara Fire Department which has jurisdiction over the area, we directed the ships to move in as far as necessary to deliver water that would check the fire, trusting in the skills and cool judgment of our personnel on board. Back at headquarters, I had told the men that there was bound to be a BLEVE—a boiling liquid expanding vapor explosion. To see it coming, rather than using their heads, they should feel first, think after.

I told them that they should be neither “kamikaze firefighters,” leaping heedlessly into the flames, nor “chickenhearted firefighters” who run away simply because they’re scared. Instead, they should act coolly on their own initiative.

“Have all five senses on high alert for signs of a BLEVE! Let the boat approach the site while you sense changes in the radiant heat through your skin, use your eyes to spot changes in flame and smoke color, sniff for any changes in odor, and listen for any changes in sound. If you notice the slightest change or sense that something is wrong, summon up your courage and get out of there!” (Of course, there was also the question of whether there would be sufficient time to escape.)

As you can see in the photograph, crew members are out on both sides of the boat without using the protective spraying devices designed to protect the boat. This photograph tells it all.

If at that time there had been no pre-contract, preparation or pre-plan and we didn’t have access to a blueprint or know details such as quay shape, I doubt that I would have issued a mobilization order to my staff even given a strong command from government authorities. I think it is clear that pre-preparation is absolutely crucial to confirming the safety of the site and taking the right disaster control action at the right time.

The Great East Japan Earthquake also caused extensive oil spills.

One such case was spillage of asphalt from a tank damaged by the LPG explosion I was just talking about, contaminating an area of approximately 42 kilometers in Chiba Port. Another oil spill occurred when Sendai refinery was damaged by tsunami following the earthquake.

In the case of Chiba, the common simulation of diffusion of oil forecasts that oil would spread out toward the entrance to Tokyo Bay, but the abnormal sea levels caused by the tsunami saw the asphalt spread in the opposite direction in Chiba Port. MDPC and the company involved threw their strength behind a cleanup operation that took more than two months. MDPC mobilized around 1,000 small work boats and more than a total of 4,000 workers. The spilt asphalt was floating rather than settling, becoming extremely viscous in low temperatures and less viscous on warm days, so cleanup presented major challenges.

We got dispersant to sink sufficiently into the asphalt adhering to port facilities, using it as a remover. Obviously, this had to be very meticulous operation, with the total amount of dispersant used in the port carefully controlled and consensus garnered from local public and private-sectors at every step. (Initially, we didn't know how much oil had been spilled, but if it was later found that we had used more dispersant than the total amount of oil spilled, that might have attracted criticism from an environmental perspective.)

In the Sendai case, domestic law stipulates that the polluter is still responsible primarily for the cleanup even in the case of large-scale spills caused by earthquake, and originally the Japan Coast Guard would issue a cleanup order. However, in a situation when no one knew possible occurrence of the next aftershock, the Coast Guard didn't order by the book. (I think that the Coast Guard took very normal decision.)

While this was an extremely large-scale natural disaster, leaving the port in its contaminated state would have caused various problems in terms of using it as a base for recovery and reconstruction efforts. On April 22, MDPC and the polluter concluded an oil spill cleanup contract and spent around one and a half months on the cleanup operation. MDPC mobilized around 90 ships, large and small, and a total of around 1,000 workers for the operation.

Incident management and issue management

Japanese domestic law places an extremely heavy burden of responsibility on the Responsible Party. Businesses earning their livelihood by transporting, storing or manufacturing hazardous substances like oil and chemicals must be constantly ready to deal with disasters that could occur in relation to the above.

Therefore, firefighting drills, training in deploying boom and other types of training are held frequently on both land and sea. This field training tends to be repeated bythe same pattern, with an unfortunate emphasis on putting on a spirited and polished performance for third parties within a limited time period that bears little relation to actual activities—deploying boom smartly in a predetermined spot, for example, or preparing firefighting hoses hastily in a place which already has numerous hoses in place, and then getting these

hitting the target as soon as possible. Such a situation causes a chronic lack of preparation and overly rigid skills.

Incident management is defined as how tochoose the right tactics for the particular situation at the incident site.

Various issues can arise in the course of that incident management. For example, some tacticsat the incident site ("incident management") might be to deploy boom and collect oil in one spot. However, you can't deploy boom without permission of the party using that port. For those who just happen to be using a place where oil will be collected, that would cause a massive inconvenience. The party is consequently likely to demand that oil is not collected on its quay if at all possible, with boom instead deploy around the quay of another party or a public quay and oil collected there.

The role of managing these various issues accompanying incident management falls on the so-called "emergency taskforce" (whether forpublic sectorsorfor private sectors).

The scope of those parties involved in "issue management"—in other words, the public and private-sectors who are directly or indirectly impacted by the incident response strategy and/or tactics—is quite different for oil spills in public waters, or spreading as far as national roadsthan for fires occurring within a firm's own premises. It is also different for the duration of the response, which in the case of the Chiba incident required around two weeks for the fire and around two months for the oil spill.

Typical oil spill cleanup drills are conducted on the assumption of the extent thatspilled oil from a land-based facility is, or can be, prevented from spreading by deploying boom. However, even where only a little oil is spilled, if the boom doesn't work, or is deployed too late, the oil will spread rapidly. In such cases, as with oil spills from oil tanker, oil that has begun to spread will encroach on port facilities, by which stage deploying boom for preventive purposes will have little effect.

The marine pollution incident resulting from the Great East Japan Earthquake was just such a case where “issue management” in extended responses to wide-area spills was called into question.

Incidents also occur in the conference room!

Please try imagining the following fictional episode. You are in charge of environmentand safety at an oil company. Your normal duties are built around the premise that an incident will not occur. Every time you know an incident involving another company’s facilities or shipsin the newspaper, you tell yourself that the same thing wouldn’t happen at your firm. And if it did, well, employees have been trained to deal with incidents. But it’s bad luck to think that! It’s even bad luck to think that an incident might occur. This is the kind of soliloquy that runs through your head.

When it comes to training, your company participates every year in the joint exercises conducted by the public and private sectors. Employees also have a great esprit de corps. And we could get some assistance from the Cooperative Disaster Prevention Organization in the area. Holding your unease at bay, you focus solely on measures to ensure that an incident doesn’t occur. In terms of an incident response, all you can do anyway is execution of thetactics within the scope of what can be done using the equipmentstored under domestic law. This conflict in your head continues.

Then, one day, you are called to the phone because there has been an incident …

When an incident occurs, nervous personnel assemble apprehensively in the emergency taskforce conference room. In the conference room, a number of instructions are made at the same time to ascertain the current situation. At the incident site, they want to know if they can use dispersant. They want to deploy boom toward the opposite side, but if they do, it will prevent the ferry from coming into port. That kind of decision can’t be made at the incident site; the emergency taskforce has to give instructions! (It’s impossible to take that responsibility at the incident site.)

Nearby firms and other parties involved in cooperative organization will give assistance to respond to the incident at the site. In other words, they will help out with incident

management. However, issue management has to be resolved by the polluter. If you can't handle issue management, you can't ask nearby firms to help out with cleanup work. How on earth do you deal with this kind of issues?

A flood of questions arrives. Public and private sectors using the sea and the port want to get information on the incident, or ask about compensation for damages; the mass media has more questions; and head office also wants to know what's going on.

Just then, you get a query from the incident site. Should they at least put a huge number of absorption mats into the sea? In the emergency taskforce, you lose your cool and shout that the incident occurs here in the conference room too! "It's not just occurring out there at the site! Show us that you're doing your best! Do what you can!" (What happens if all those hastily-laid absorption mats are later discovered in the stomachs of sea birds or in laver nets and this becomes an environmental problem?)

When nervous personnel gather in the conference room, an "anxiety synergistic effect" occurs, whereby confusionoutside and turmoil insidemake it unclear who takes responsibility. On top of that, unlike a fire in your own firm's facilities, which you know all the ins and outs, you have to deal with oil that has spilled over a wide area in public waters, you're bombarded with the names of jetties you've never heard of and latitude and longitude figures without any other information, and you don't know how to read a chart. In this situation, unease over lack of preparedness turns into fear.

In the case of large-scale oil spills, issue management falls not only on the polluter but also on those coastal businesses suddenly forced to deal with pollution damage.

For example, a coastal operator might come hammering on the polluter's door, saying that if the cargo jetty isn't cleaned up as soon as possible, they won't be able to shift cargo. They direct their anger at the polluter. The polluter was probably hoping for help from these nearby operators, and instead the latter are now seeing themselves as victims and are expressing their irritation at the inadequate and opaque response of the overwhelmed polluter. "Your company is handling this badly. We have no idea what you want to do.

Where is this all going?" they demand, increasingly suspicious of the polluter's insufficient issue management.

The emergency taskforce (incident response organization) responsible for incident management and issue management can physically be seen to be working furiously at the incident site to clean up the spill. However, the issue management pertaining to the incident is only visible through media reports and public relations materials.

Approaches to issue management differ according to the operator and can't be glimpsed from the outside. Even neighboring operators and other businesses from the same business group which might be able to help out at the incident site can't extend much cooperation when it comes to issue management.

Let's shift our perspective on issue management from the level of a single company to that of a major disasters like the Great East Japan Earthquake.

First of all, operators and shipowners suffering large-scale damage lose their ability to undertake disaster control activities at the site and become victims of the event. Victims can't be expected to respond to maritime disasters, and nor should they try. As was the case in Sendai, cleanup resources also get swept away. To tackle the cleanup, materials, resources had to be contrived and mobilized from other regions that weren't affected.

We need to look ahead to the kind of large-scale maritime disasters that could arise in the event of the expected large-scale earthquake, or major oil spills caused by incidents involving, for example, large tankers, and standardize approaches to mobilizing resources from unaffected areas and making strategic, effective and efficient use of those resources, so that the public and private sectors can work together effectively to address the situation.

"An incident has occurred. Just do what you can with the resources you have at hand." Is such a passive response from PolluterA likely to win the understanding of the local community? Polluter B, on the other hand, having suffered the impact of an incident, makes it clear that the company wants to minimize the damage and sets out a strategy of closing off Harbor Ward 4 to keep the spill contained, explaining to the relevant

institutions that to implement that strategy it usesboom and barges. To that end, Polluter B puts out a call for cooperation, asking for all the boom and barges in the vicinity, whether public or private sectors, to be brought in. If Polluter B's proactive initiative can be turned into a plan with the agreement of those involved from both the public and private sectors, an Incident Action Plan can be drafted which has the consensus of the local community and the contribution and supply of resources should proceed much more smoothly.

In the case of major oil spills, polluters should not seek to draw up IAPs in isolation but should rather work with the relevant public and private sectors to ensure that a consensus can be reached which will allow cooperation to be solicited in the supply of resources. If this incident and issue management process is coordinated across the public and private sectors in normal times and reinforced through drills and training, it should be possible to responds not only to major oil spills but to all types of disasters, including earthquakes, typhoons and other natural disasters.

A command and operation system for incident response organizations

Whether large- or small-scale, national or facility level, if incident and issue management following an incident—in other words, a command and operation system for incident response organizations—is unified at national level, resources held by the public and private sectors can be utilized effectively for a common purpose beyond the barriers between them. The polluter and the relevant government institutions lead the way in preparing an IAP and conducting an efficient and effective cleanup. In short, what I am talking about is the standardization of approaches to resolving and dealing with incidents that occur in the conference room.

In the US and other countries, in the event of large-scale, wide-area disasters like forest fires, oil spills and the natural disasters—earthquake, tsunami, typhoon and etc. — , on the assumption that cooperation among the national government, local authorities, local communities and individual businesses is necessary,frameworks and approaches have consequently been established for smooth cooperation by not only administrative institutions but also private enterprises and other parties under a single management system.

This command and operation system for incident response organizations is called an Incident Command System (ICS).

As I noted earlier, when an incident such as large-scale earthquake causes large-scale marine pollution, businesses in the affected area, as well as their equipment, are unlikely to be able to be utilized for the response. In such cases, the ideal scenario would be for local governmentand oil and chemical businesses from unaffected areas to gather equipment and personnel and address incident and issue management through a unified control and operation system.

The ICS is by no means a special organization, but rather an incident response "template" shared by the public and private sectors. Clear responsibilities, an integrated communications system, standardized terminology and a standardized organizational form mean that, even in different places and organizations, equipment and personnel held by multiple organizations are incorporated into one standard organization to enable the efficient use of those resources.

This ICS is considered an optimal system for cleanupactivities, both from economic perspective of the integrated utilization of cleanup equipment held variously by the public and private sectors, and from cost management perspectiveof understanding a rough estimate of the cleanup cost.

The system enables us to operate, plan and provide logistics for the response, based on the understanding of the information on the situation of oil pollution, possible spreading of pollution area and the total amount of equipment available.

If Japan were to adopt the ICS system, it would not only make issue management clear at each facility, but also would establish a framework for dealing with the difficult problem; i.e. "We need to achieve the consensus of local community on oil spills". The ICS system opens the way for the integration of public and private sectors' efforts—in other words, it realizes a unity of effort.

ICS has already become established as “lingua franca” for the disaster response in the US, New Zealand, Canada, Australia, Mexico, India, the Philippines, Brunei, Sri Lanka and other countries. The International Maritime Organization (IMO) approved the ICS as an incident management system at the June 2010 meeting of the Marine Environment Protection Committee. Once the relevant procedures have been completed, the IMO is expected to publish the ICS, which should encourage even more countries around the world to adopt it.

Some people would say that Japan already has a similar system to the ICS, but in Japan, the separate ministries just do their best to respond to disasters within the scope of their competent laws (although this is the same as the ICS). The Cabinet Office is nominally responsible for coordinating their activities, but even following the Great East Japan Earthquake, countless organizations called “emergency taskforces” sprouted up within the individual ministries and agencies, prefectures, cities, towns and villages, etc. Who is in charge of the overall disaster response, and how? What is tomorrow’s incident response plan? The great efforts of each ministry using its own particular approach can perhaps be summed up with the words “let’s all do our best.” What I want to stress is that “let’s all do our best” implies a single team, and in the case of soccer teams, for example, while there may be specialist coaches for each position, there is only one manager. That’s what “one team” means.

Incident management is the same as sports

Public-private cooperation is essential to successful response to major oil spills. It is absolutely important that the relevant government and private-sectors share knowledge and skills in relation to incident management during normal times, including dispersant mechanisms, the limit of boom performance and the recovery efficiency of mechanical skimming. Pre-plans and tactics—equivalent to the various formations designed for goal-scoringin the soccer game—also need to be shared. This might include, for example, measuring surface current at low tideand high tide, so that if there was an oil spill, particular quays could be designated as the oil recovery spots for particular areas.

However, if the “government soccer league” and the “private-sector soccer league” each have different names for team positions, different-sized goal mouths and different match

times and rules, should the opportunity ever arise to play on the big stage of an international competition, they will be unable to assemble a mixed government-private sector team. If under a unified management system—in other words, an ICS—terminology is standardized, responsibilities clarified, and rules laid down for equipment utilization and purchase methods, we would be able to address issue management far more smoothly.

If administrative institutions, businesses, NPOs, polluters and other groups and persons involved in major oil spills standardize their incident response method during normal times and conduct drillsregularly, when a large-scale, wide-area marine disaster does occur, they will be able to organize a "national Japanese team" and respond to the disaster as a team.

In normal times, if individual teams practice regularly after school, their efforts will eventually be rewarded in prefectural or national competitions. However, if it is not clear what administration methods an incident response organization will use and with whom responsibility lies—in other words, if rules are not standardized and there is insufficient practice—simply scooping up a large number of people and putting them in the same All-Japan uniform is extremely severe to the players forced to stand out there on the field.

Incident response activity (emergency response) is the same as sports. Regular ongoing efforts under standardized rules during normal times open the way for shared tactics and communication through eye contact, so that goals can be achieved even in the face of attacks by powerful opponents (equivalent to major oil spills). It is really "visionary crisis management".

Whenever major marine pollution occurs, the impact spreads rapidly to wider area. Disaster prevention means making concrete preparations during normal times based on the assumption that incidents will certainly occur.

No one knows when they will be thrown out into the soccer field, in other words, the site of major incident. However, if a mixed government-private sector team prepares for that event by devising tactics and practising regularly, I am sure that they will always be crowned with the laurels of victory. Crisis management is, I believe, the same as sports. I

suggest that we begin by standardizing terminology and rules across the government and private sector.

Thank you for your attention.