The PowerPoint slides for Japan Coast Guard was translated by Japan Coast Guard staff.

# 20 years after the NAKHODKA accident ~ Looking Backward and Looking Forward ~

# Japan Coast Guard

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# [Section 1 : Summary of the accident] ~ What I saw when responding to the accident ~

[Section 2 : Issues and countermeasures]
~ What were the Issues and how were they improved ~

[Section 3 : New issues]

~ Things to tell from my experience regarding the accident\_~

# [ 1: Summary of the accident]



2:51 AM on January 2, 1997

Japan Coast Guard received a distress signal from the Russian Tanker "NAKHODKA"

Sinking position of the stern

Location where the accident occurred

Name of vessel: NAKHODKA Type: Oil tanker Gross tonnage: 13,157t Loaded oil: heavy oil 19,000k& Crew: 32 persons

> Toyama Pref. 富山県

Ishikawa Pref. 石川県

Fukui Pref.

Shiga Pref.

Ship's hull broke into two parts and the stern part sank. The bow part floated to the Mikuni Town of the Fukui Pref. with 2,800ke of the heavy oil remaining inside.

> Tottori Pref. 鳥取県

> > The Mikuni Town in Fukui Prefecture is now called the Sakai city, Fukui Prefecture.

Kyoto Pref.





The national Strike Team is a specially trained team that responds to oil spills incident and hazardous and noxious substances spill incident in the marine environment. Their primary mission is to provide technical advice, support, and guidance on installations and related regulations. (Established in April 1995)



### Crew rescue operation





# The drifting bow part of NAKHODKA





### Drifting oil from the patrol vessel









### Stopping the drifting bow part of NAKHODKA by a patrol vessel







2:30 PM on January 7, 1997 The bow part of NAKHODKA was stranded some 200m from the shore near the Mikuni town in Fukui Pref. -Why do we have to recover oil in rough sea conditions until we risked our lives? - Japan Coast Guard





### People in Japan prefer to eat fish and shellfish.



# It takes time to collect and process them.







In order to protect the lives of fishermen and maintain the natural ecosystem, we conducted oil recovery in the sea.

- How about dispensing a lot of oil dispersants? -

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For heavy oil, the effect of oil dispersants which had been marked in the past could not be expected.

面布 A

Local fishermen were negative in using oil dispersants due to past examples, which were not so positive.

# Lessons from past accidents: ①"MARITIME GARDENIA"



January 1990, Stranding of the MARITIME GARDENIA. Location: Off kyoga promontory, Kyoto Pref. Spilled oil: heavy oil, 916ke



# Lessons from past accidents: "JULIANA"

November 1971, Stranding of the Juliana A moored "JULIANA" was blown onto a reef by strong winds. Location: Off the port of Niigata Spilled oil: Crued oil, about 7,000k?

















# -Cannot use oil skimmers?



# You cannot efficiently recover oils with dipper-





# Lesson from past accidents: "TOYOTAKA MARU"



October 1994, Collision of the "TOYOTAKA MARU" A domestic tanker collided with a moored tanker named "TOYOTAKA MARU". Location: Wakaura Bay in Wakayama Pref. Spilled oil: Crued oil, 570k?



Oil viscosity was high and oil was quickly enclosed by oil booms. So almost all the oil has been recovered by the bucket of the crane ship.



Name of Vessel: TOYOTAKA MARU Type: Oil Tanker Gross Tonnage: 2,960t Loaded oil: Crude oil, 5,137k&

# - Should we recover the oil drifting along the coast? -



We must avoid damage to the fishery industries.

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Cleaning the coast

Recover with people's power Carry to the tank by personnel delivery system. Thousands of volunteers gathered from all over the country recovered oil every day.



### Oil skimmer installed on the coast





Oil temporary storage area



Create a big oil pit in Fukui-shinko Port











# New ideas! Cleaning the coast with a concrete pump truck



### Expansion of oil booms

Ever if you extend the oil booms in good weather...

In bad weather after hours...

Thus, the oil booms tear off and drift back to the coast...











First breeder reactor "MONJU"

Fukui Pref. 福井県

Takahama Nuclear Power plant

Mihama Nuclear Power plant

Reactor Out of 14 • Takahama 4 • Ohi 3 • Mihama 3 • Tsuruga 2

At that time

Oil booms extended to the coastal part

of the nuclear power plant.

<u>└ Monju 1</u> Driving 13 Ohi Nuclear Power plant Kyoto Pref. 京都府 Tsuruga Nuclear Power plant



# Oil booms extended to the coastal part of the Aquarium.









### **Extended Oil booms**









# Extracting oil from the bow part of NAKHODKA (On sea)





# Extracting oil from the bow part of NAKHODKA(On land)





Construction of a temporary road from the coast to the bow part of NAKHODKA





# Lessons from past accidents: "JULIANA"







Plant piping from the coast to "JULIANA" on the seabed. <u>Remove oil remaining in Juliana from the land side.</u>

> Crude oil extraction operation Extraction ship Power supply ship Extraction ship

> > Land



### Removal of the bow part of "NAKHODKA"





# The coming up oil from the stern part of "NAKHODKA"





Rope

### Hull sank the stern part of "NAKHODKA"

Picture1

Bottom of the sea

0:2583 M

Picture2

The stern part of "NAKHODKA" was surveyed by an unmanned deep-sea vehicle called "Dolphin-3K" with the assistance received from Japan Agency for Maritime-Earth Science and Technology Center (JAMSTEC).

Carrying about 10,000k& of heavy oil, The ship body sank to the bottom at a depth of 2,500m Photo offered by JAMSTEC



~ What are the issues and how were they improved ~

"Revising laws and plans"

Revising the "Law Relating to the Prevention of Marine Pollution and Maritime Disaster"

- ·Liability for owner of the ship is clear!
- ·Adding countermeasures in the open sea to "Plan for the cleaning of spilled oil"
- Revising the "National Contingency Plan for Oil and HNS Pollution Preparedness and Response"
- ·Establishment of "Precaution Headquarters" (headed by the Commandant of the Japan Coast Guard)

"Improvement of JCG systems"

Reinforcement of the National Strike Team

"Equipment of JCG"

Providing heavy oil recovery devices Providing heavy oil dispersants





Establishment of the Headquarters for Major Disaster Management activities

[Local] On-site major disaster management Headquarters



### The accident onboard the Tanker "DIAMOND GRACE"

July 1997 Tanker "DIAMOND GRACE" struck the sand bank, Nakanose, in the Tokyo bay. Some 1,550k& of Heavy oil spilled out.



Establishment of the Headquarters for Major Disaster Management activities based on the Basic Act for Disaster Countermeasures, and response to accidents

- Improvement of the available systems -



Reinforcement of the National Strike Team



- Provision of necessary equipment -



### New heavy oil recovery devices











# [Section 3: New issues]







Decrepit equipment Renew and maintain in good condition

There should be oil spill protection systems as below:

- There should be strict regulation for building safe tankers.
- There should be suitable regulation on ship's fuel oils and alternative fuel oils for ships must be developed.

But accidents cannot be altogether eliminated.

We will continue to depend on marine transport of oils using oil tankers.



TAPAN COAST GUARD

Therefore, we must continue to look for ways to prevent such accidents from occurring.



### We must not forget the memory of this accident, and should rather continue to talk about it.



After removal of the bow part of "NAKHODKA", a monument was built on the sea coast.









# Preserve Blue Seas for the Future ! — JCG —