



# Trial developments and surveys of Inventory of Hazardous Materials

For the implementation of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

### June 2010

NIPPON KAIJI KYOKAI



**ClassNK** Trial developments and surveys of Inventory of Hazardous Materials (IHM)



## **Contents**

### ➡ 1. What is "IHM"?

- 2. Trials of New Ships
- ➡ 3. Trials of Existing Ships
- ➡ 4. ClassNK and the Convention





# 1. What is "IHM"?

Inventory of Hazardous Materials lidentification No.

PART 1 OF THE INVENTORY OF HAZARDOUS MATERIALS ATTACHMENT TO THE INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

Name (	of Ship	CLASSNK FUTURE
Distinctive nur	nber or letters	NK007
INO number		9999999
Port of Registry		ТОКУО
Gross Tonnage		99999
01-i	Name	NIPPON KAULKYOKAI
Simpowner	Address	4-7 Kioi-cho, Chiyoda-ku, Tokyo, JAPAN
IMO registered owner	identification number	XXXXXXXX
IMO company identification number		XXXXXXXX
Date of Co	nstruction	25-Aug-09



(signature of duly authorized official issuing the certificate) (Seal or stamp of the authority, as appropriate

3







Measures to achieve

 Ship => Develop & maintain a list indicating details of Hazardous Materials on board the ship Inventory of Hazardous Materials (IHM)

 ✓ Recycling Facility ⇒ Ensure environmental protection, provide enough facilities, and ensure labor safety and health

✓ Preparation of Recycling ⇒ Ensure delivering IHM, thorough 'gas-freeing', development of recycling plan, etc.







# **Role of IHM in the Convention** IHM indicates Quantity & Location of actual Hazardous Materials on board the ship, Wastes, and Stores

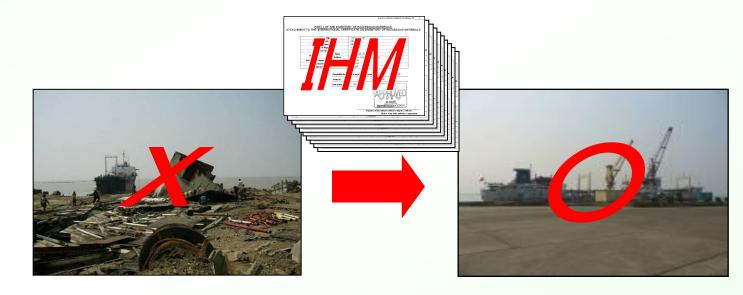
Table B	Mercury and Mercury Compounds	1,000 mg/kg	Yes	10	g
taterials Listed in ppendix 2 of the	Polybrominated Biphenyl (PBBs)	1,000 mg/kg	No		





### Aim of the IHM

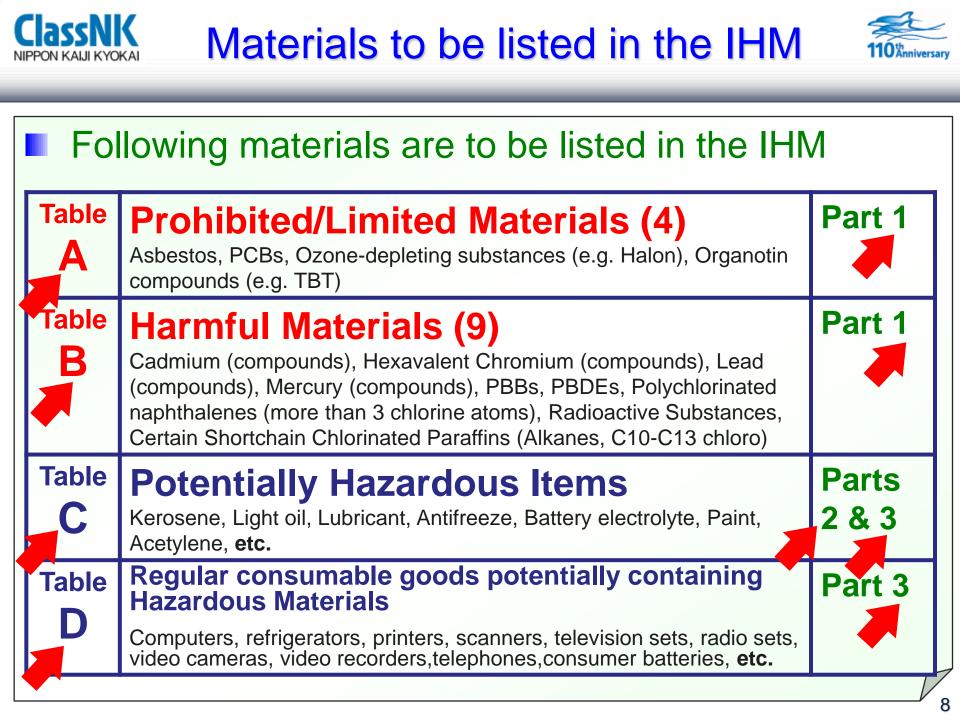
- To provide information on Hazardous Materials on board the ship to:
- Protect <u>safety</u> and <u>health</u> of workers
- ✓ Prevent <u>environmental pollution</u>







The	Inventory consists of	3 parts:
	Contents	Developed at
Part 1	Ship structure and equipments	<b>Delivery of the ship</b> (to be maintained during her operation)
Part 2	Operationally generated wastes	Just before the Recycling
Part 3	Stores	Just before the Recycling





**Example of IHM** 



#### (Standard Format of the Guideline for the Convention) Part 1 Part I HAZARDOUS MATERIALS CONTAINED IN THE SHIP'S STRUCTURE AND EQUIPMENT I-1 Paints and coating systems containing materials listed in Table A and Table B of appendix 1 of the guidelines Materials (classification No. Application of paint Name of paint Location Approx. quantity Remarks in appendix 1) 1 Anti-drumming compound Primer, xx Co., xx primer #300 Hull part Lead 35.00 kg 2 TBT Anti-fouling xx Co., xx coat #100 Underwater parts 120.00 kg

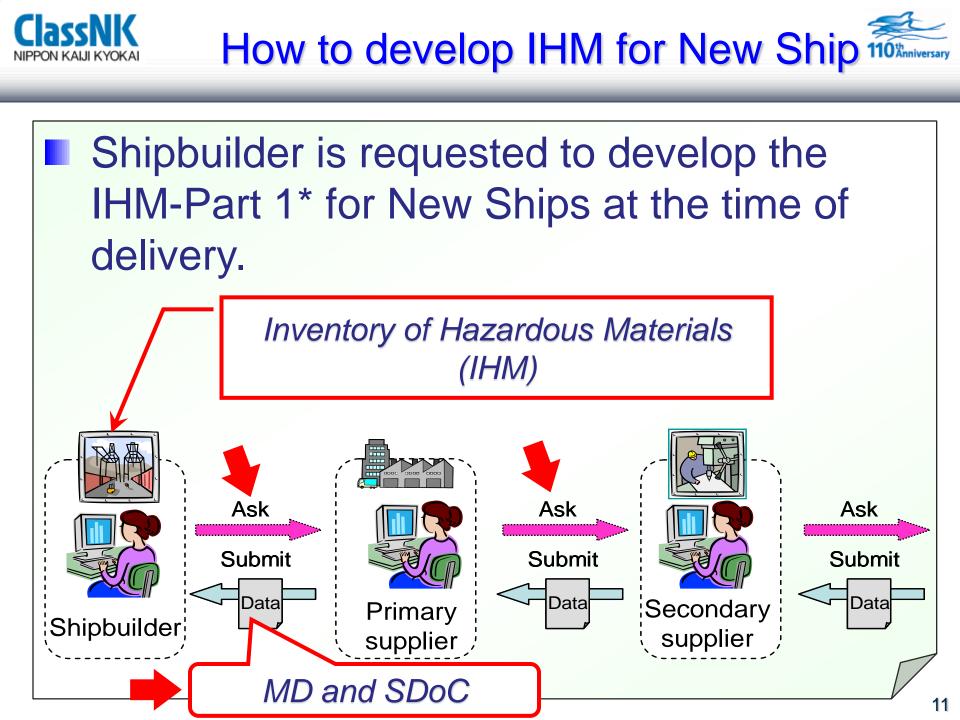
#### I-2 Equipment and machinery containing materials listed in Table A and Table B of appendix 1 of the guidelines

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Appr quant	-	Remarks
1	Switch board	Engine control	Cadmium	Housing coating	0.02	kg	
	Switch board	room	Mercury	Heat gauge	<0.01	kg	less than 0.01kg
2	<del>Diesel engine, xx Co., xx #150</del>	Engine room	Cadmium	Bearing	<del>0.02</del>	<del>kg</del>	
3	Diesel engine, xx Co., xx #200	Engine room	Cadmium	Bearing	0.01	kg	Revised by XXX on Oct. XX, 2008
4	Diesel generator (x 3)	Engine room	Lead	Ingredient of copper compounds	0.01	kg	





# 2. Trials of New Ships



#### ClassNK NIPPON KALJI KYOKAI Trial Survey of IHM for Newly Built Ship

### **1. Arrange Seminar to shipbuilders, makers, etc.**

2. Visit shipbuilders and makers to explain how to develop IHM.

### 3. Steps for developing IHM Part I

<Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail

<Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.

<Step3> On-board Checking

**ClassNK's Survey** 

<Step4> Finailize IHM Part I

**ClassNK's Approval** 





### 1. Seminar on the Convention & developing IHM







### 2. Visit Shipbuilders to explain how to develop IHM



- 1. Arrange Seminar to shipbuilders, makers, etc.
- 2. Visit shipbuilders and makers to explain how to develop IHM.

#### 3. Steps for developing IHM Part I

- <Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail
- <Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.

<Step3> On-board Checking

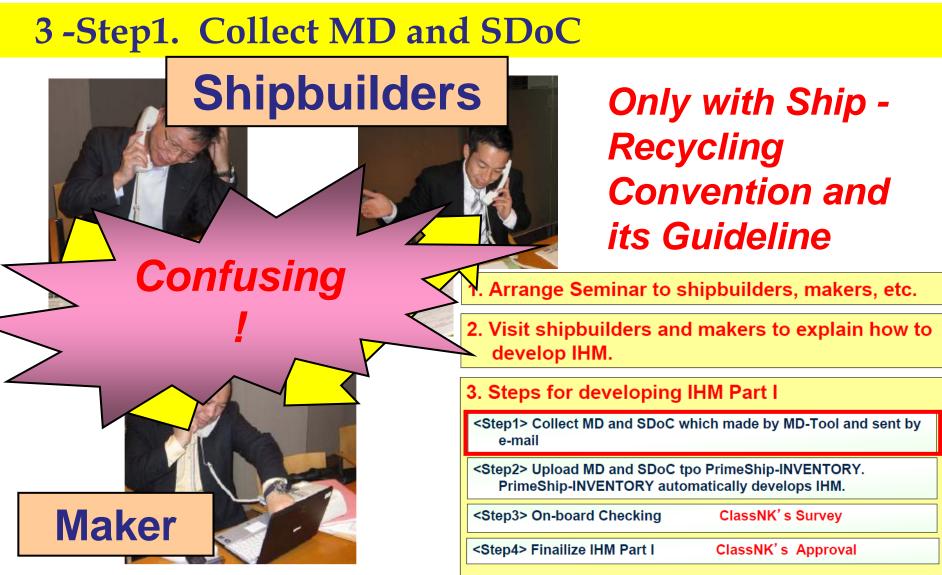
ClassNK's Survey

<Step4> Finailize IHM Part I

ClassNK's Approval

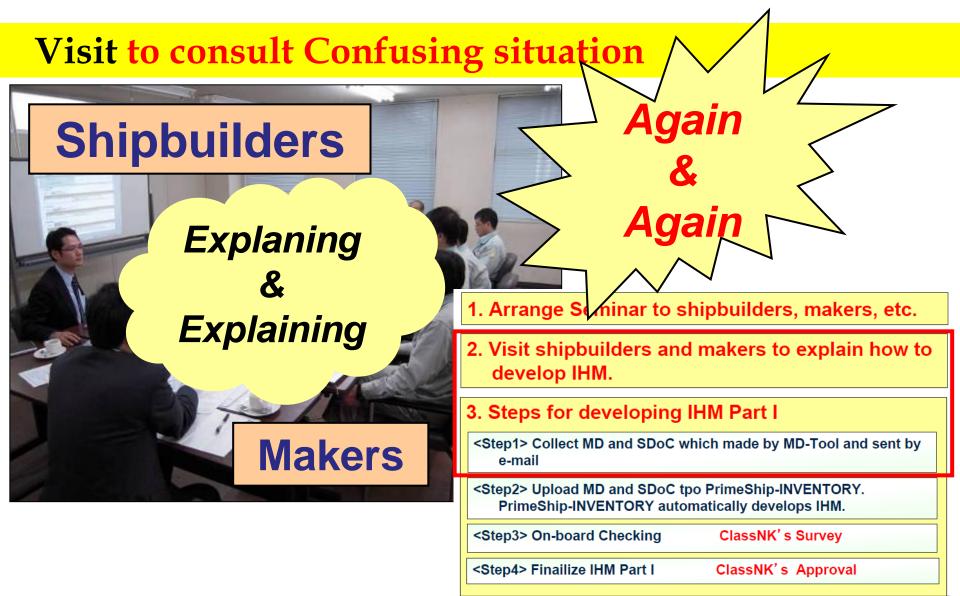
















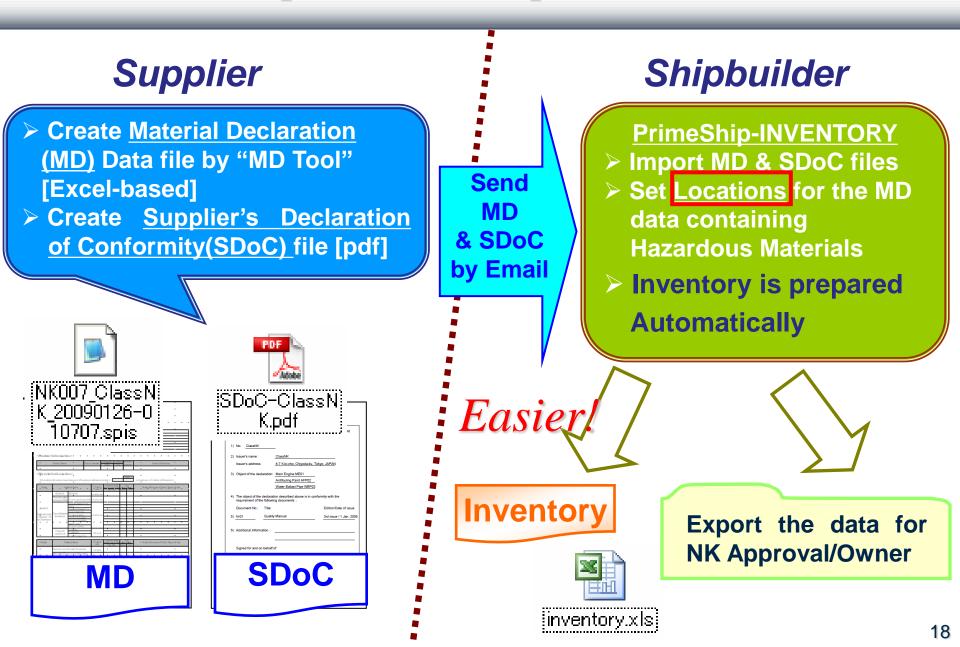
# <u>ClassNK</u> decided to develop a software; <u>PrimeShip-INVENTORY</u>,

### for the **smooth** development IHM, MD and SDoC for Newly-Built Ships.



#### ClassNK NIPPON KALJI KYOKAI Concept of PrimeShip-INVENTORY

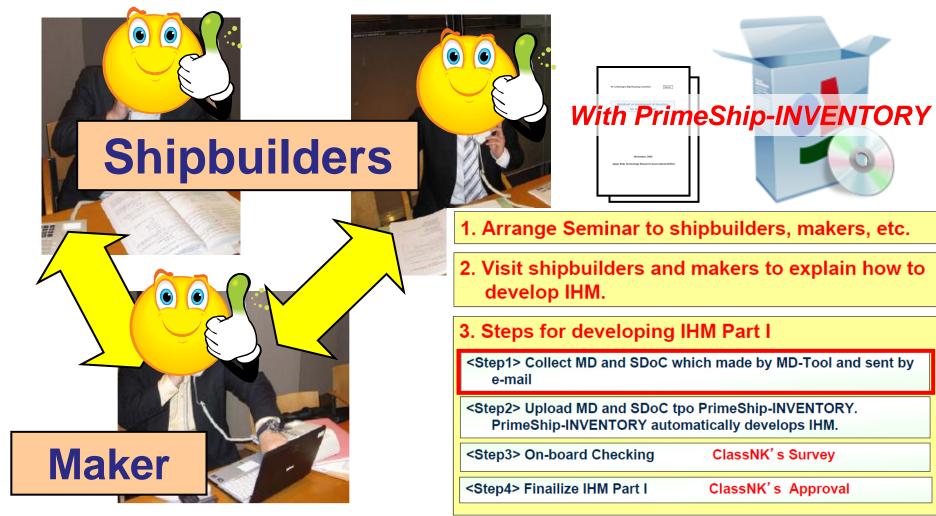








### **3-Step1.** Collect MD and SDoC





1.

**Shipbuilders** 

**Activities of Trial Survey** 



### **3-Step2.** Upload MDs and SDoCs



1. Arrange Seminar to shipbuilders, makers, etc.

2. Visit shipbuilders and makers to explain how to develop IHM.

#### 3. Steps for developing IHM Part I

- <Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail
- <Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.

<Step3> On-board Checking

ClassNK's Survey

<Step4> Finailize IHM Part I

ClassNK's Approval





### 3-Step3. On-board Checks (1/3)



- 1. Arrange Seminar to shipbuilders, makers, etc.
- 2. Visit shipbuilders and makers to explain how to develop IHM.
- 3. Steps for developing IHM Part I
- <Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail
- <Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.

<Step3> On-board Checking

ClassNK's Survey

<Step4> Finailize IHM Part I

ClassNK's Approval





### 3 – Step3. On-board Checks (2/3) Visual Check

- Hull Part / Superstructure / Compass Deck
- 44. SCANNER UNIT

- 1. Arrange Seminar to shipbuilders, makers, etc.
- 2. Visit shipbuilders and makers to explain how to develop IHM.
- 3. Steps for developing IHM Part I
- <Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail
- Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.
- <Step3> On-board Checking
- ClassNK's Survey
- <Step4> Finailize IHM Part I ClassNK's Approval







### 3 – Step3. On-board Checks (3/3) Visual Check

Machinery Part / Engine Room / 3rd Deck

57. VERTICAL OIL-FIRED BOILER

1. Arrange Seminar to shipbuilders, makers, etc.

2. Visit shipbuilders and makers to explain how to develop IHM.

3. Steps for developing IHM Part I

<Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail

Step2> Upload MD and SDoC tpo PrimeShip-INVENTORY. PrimeShip-INVENTORY automatically develops IHM.

<Step3> On-board Checking

ClassNK's Survey

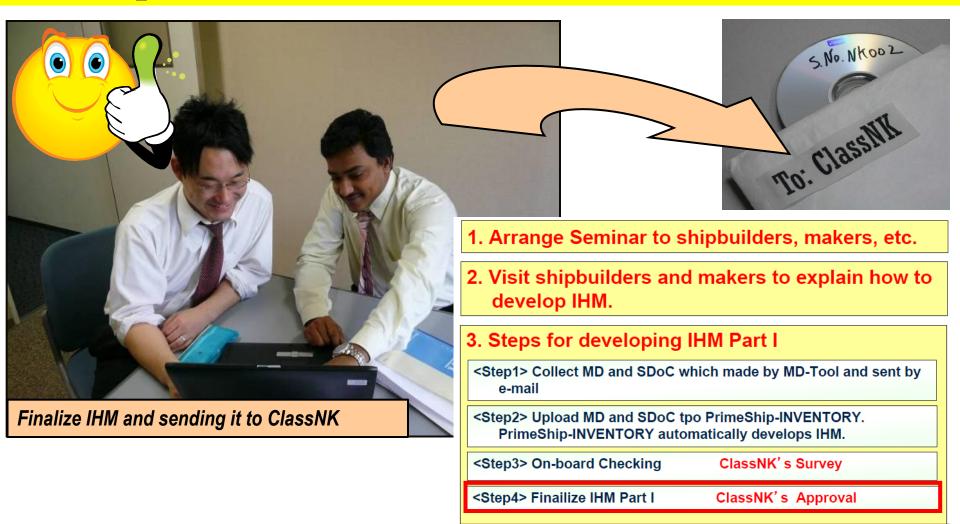
<Step4> Finailize IHM Part I ClassNK's Approval







### **3 – Step4.** Finalize IHM and submit to ClassNK

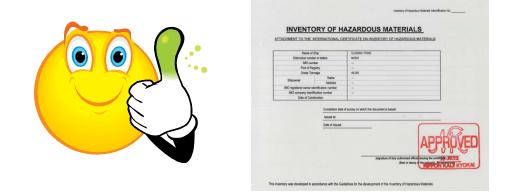






### **3 – Step4.** Finalize IHM and submit to ClassNK





- 1. Arrange Seminar to shipbuilders, makers, etc.
- 2. Visit shipbuilders and makers to explain how to develop IHM.

#### 3. Steps for developing IHM Part I

- <Step1> Collect MD and SDoC which made by MD-Tool and sent by e-mail
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<Step3> On-board Checking

ClassNK' s Survey

<Step4> Finailize IHM Part I

ClassNK's Approval





# **3. Trials for Existing Ships**

T. NA. B



- Level of investigation "Shall comply as far as Practicable", <u>at least</u> 4 Materials on Table A should be identified.
- Deadline for development of the IHM
   <u>Within 5 years</u> after the Convention enters into force.
   (Assumed due date 2017)
- Method of the development
   Experts make an IHM according to the necessary steps prescribed in "the Guideline for the Convention";

- This method does not need to trace back the supply chain of the ships.

#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM 102 MINIVERSARY

<b>Step1&gt; Collection of necessary information</b> As-fitted drawings, Manuals, Data on sister ships etc.	
<step2> Analysis and Definition of scope of investigations Table A Materials are compulsory, Table B recommended.</step2>	Expert Work
<step3> Preparation of Visual/Sampling Check Plan Classify the area for (1) Visual check, (2) Sampling check, (3) Potential.</step3>	
<b>Step4&gt; Onboard Visual Check and Sampling Check</b> The area where Check cannot be done are classified as Potential area.	
<b>Step5&gt; Preparation of IHM - Part I</b> Classify into "Containing Hazardous Material" or "Potentially containing Hazardous Material" with quantity and location.	
Administration or RO> On Board Survey Administration/RO has on-board survey through IHM and/or VSC plan	Class
<administration or="" ro=""> Approval of IHM</administration>	Work

#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM 110 Anniversary

### **1. Investigation of Plans**

<Step1> Collection of necessary information As-fitted drawings, Manuals, Data on sister ships etc.

<Step2> Analysis and Definition of scope of investigations Table A Materials are compulsory, Table B recommended.

<Step3> Preparation of Visual/Sampling Check Plan Classify the area for (1) Visual check, (2) Sampling check, (3) Potential.

<Step4> Onboard Visual Check and Sampling Check The area where Check cannot be done are classified as Potential area.

<Step5> Preparation of IHM - Part I Classify into "Containing Hazardous Material" or "Potentially containing Hazardous Material" with quantity and location.

Administration or RO> On Board Survey Administration/RO has on-board survey through IHM and/or VSC plan

<Administration or RO> Approval of IHM

Collecting plans of ship and selecting necessary plans.

#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM TO Anniversary

### 2. Onboard Check (Investigation of Plans onboard)



Checking "List of Parts" which could not be found at land.

#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM TO Anniversary

### 3. Onboard Check (Store Survey)



Surveying Store for investigating used packing.

<Step1> Collection of necessary information As-fitted drawings, Manuals, Data on sister ships etc.

<Step2> Analysis and Definition of scope of investigations Table A Materials are compulsory, Table B recommended.

<Step3> Preparation of Visual/Sampling Check Plan Classify the area for (1) Visual check, (2) Sampling check, (3) Potential.

<Step4> Onboard Visual Check and Sampling Check The area where Check cannot be done are classified as Potential area.

<Step5> Preparation of IHM - Part I Classify into "Containing Hazardous Material" or "Potentially containing Hazardous Material" with quantity and location.

<Administration or RO> On Board Survey Administration/RO has on-board survey through IHM and/or VSC plan

<Administration or RO> Approval of IHM

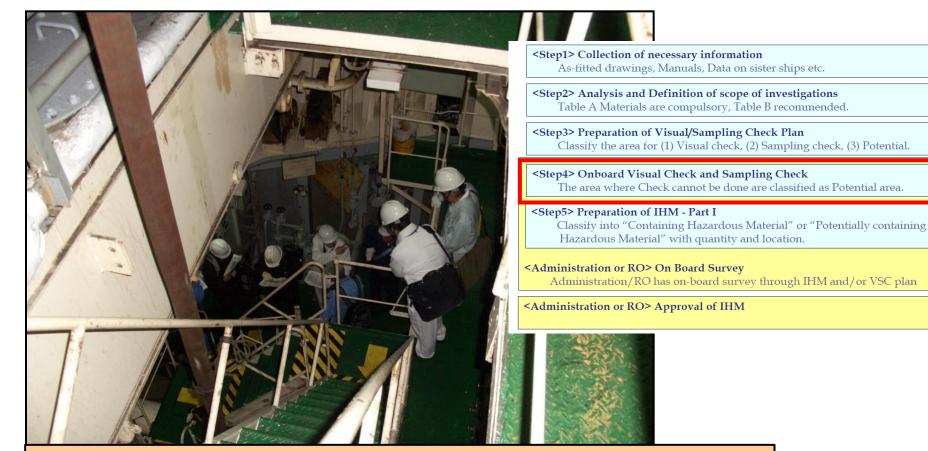
#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM TO Anniversary

### 4. Onboard Check (Sampling Check)



#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM TO Rentiversary

### 5. Onboard Check (Visual Check)



Visual Check is executed from bottom of engine room to top of accommodation area.

#### ClassNK NIPPON KALJI KYOKAI Steps of alternative way of making IHM 1102hniversary

### 8. Making IHM (Inventory of Hazardous Materials)

<Step1> Collection of necessary information As-fitted drawings, Manuals, Data on sister ships etc.

Step2> Analysis and Definition of scope of investigations Table A Materials are compulsory, Table B recommended.

<Step3> Preparation of Visual/Sampling Check Plan Classify the area for (1) Visual check, (2) Sampling check, (3) Potential.

<Step4> Onboard Visual Check and Sampling Check The area where Check cannot be done are classified as Potential area.

<Step5> Preparation of IHM - Part I Classify into "Containing Hazardous Material" or "Potentially containing Hazardous Material" with quantity and location.

Administration or RO> On Board Survey Administration/RO has on-board survey through IHM and/or VSC plan

<Administration or RO> Approval of IHM

neck, (3) Potential.
s Potential area.
tech (block)
area (block)



### Sample of IHM for Existing Ship



Inventry of Hazardous Materials :

#### Part1 HAZARDOUS MATERIALS CONTAINED IN THE SHIP'S STRUCTUER AND EQUIPMENT

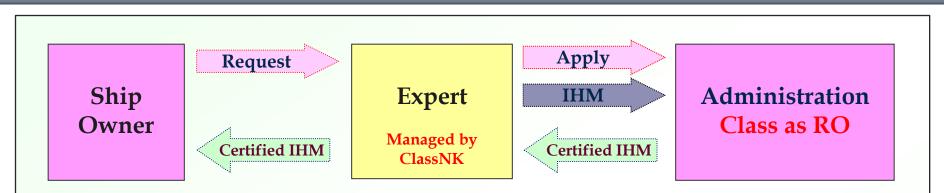
#### 1.1 Paints and Coating Systems containing materials listed in Table A and Table B of Appendix 1 of the Guidelines

No	Application of Paint	Name of Paint	Location	Materials (Classification in	Appx Quantity		Remarks
1		• Tin type AF paint of KP ACE SP A/F 100 Brown & Red Oxide until April,		твт	To be written after the result of sampling analyses has been gotton.	kg	
2		1994. •Then, sealer coat applied on January, 2004.	Vertical bottom	твт	To be written after the result of sampling analyses has been gotton.	kg	
3		•Tin type AF paint of KP ACE SP A/F 100 Brown & Red Oxide until August, 1991. •Then, sealer coat applied on January, 2004.	Flat bottom	1	To be written after the result of sampling analyses has been gotton.	kg	

#### 1.2 Equipment and Machinery containing materials listed in Table A and Table B of Appendix 1 of the Guidelines

			Materials			
No	Name of Equipment and Machinery	Location	(Classification in	Patrs of Use	Appx Quantity	Remarks
	the second second		Appendix I)			
1			Asbestos	Packing for air cooler	0.24 kg	
2	Main engine		Asbestos	Gasket for governor	0.06 kg	
3			Asbestos	Brake lining for turning gear	0.03 kg	
4	Propeller		Asbestos	Sheet Packing	0.32 kg	
5		Lower floor	Asbestos	Sheet packing(No.11)	0.29 kg	
6	Stern tube seal	Lower noor	Asbestos	Sheet packing(No.10)	0.16 kg	
7			Asbestos	Sheet packing(No.12)	0.29 kg	· · · ·
8	Main L.O. pump		Asbestos	Packing for bottom cover	0.13 kg	
9	Sludge pump		Asbestos	Gland packing	0.36 kg	
10	Bilge circ. Pump		Asbestos	Gland packing	0.32 kg	
11	Boiler water circ. pump	1		Gasket	0.03 kg	
10		1	A 1 7			

#### ClassNK NIPPON KALJI KYOKAI How to develop IHM for Existing Ship 1102milversary



One stop servicing for Ship-Owners For ship-owners, <u>no need to contact a number of</u> <u>organizations</u> to request IHM for an existing ship.

<u>ClassNK will manage expert</u> function as a satellite company after privatization from NPO status - soon.

Minimize work and fee At present, IHM work has been implemented with an expert, JSTRA - a foundation established by JG, as an implementation program of the Convention.





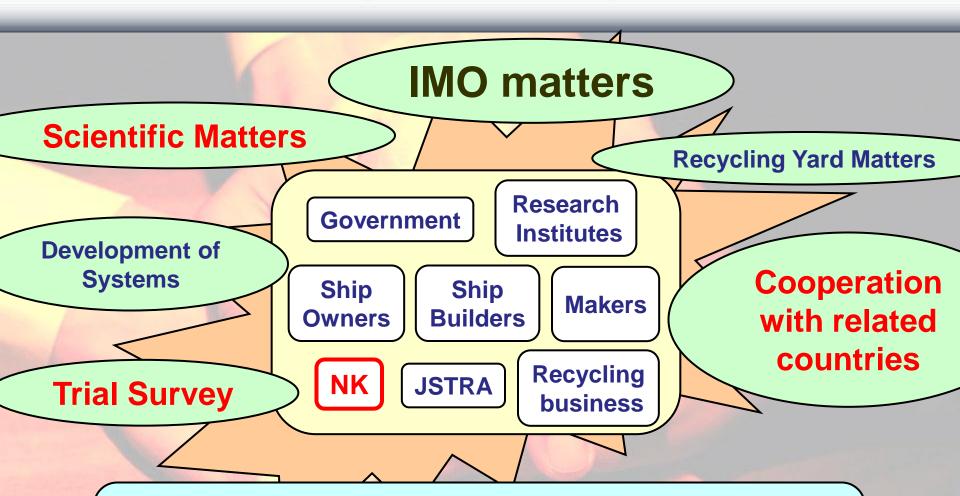


# 4. ClassNK and the Convention



### **Cooperation in Japan**





Stake Holders of Maritime Sector in Japan are cooperating together on Implementation of Development and Survey of IHM, MD and SDoC.





### <u>ClassNK</u> is

cooperating with all the concerned parties (ship owners, shipbuilders, etc.) for necessary preparation to <u>ensure smooth implementation</u> of the Convention.

<u>Activities in Japan for Developing IHM(from 2008 to 2009)</u>

- Trial of Existing Ships (approx. 40 Ships)
- Trial of Newly Built Ships (approx. 20 Ships)
- Making a software for Development of IHM
- Arrangement of Seminars on the Convention

and Meetings with Owners, Shipyards etc.

✓ Issuance of <u>Statement of Fact</u>

NK

#### ClassNK NIPPON KALJI KYOKAI Cooperation in Japan and ClassNK









✓ ClassNK issues Statement of Fact (SOF) for the IHM developed before the convention comes into force.

✓ Shipowners are able to proceed to the early preparation since SOF is rewritten to the conventional certificate after the convention comes into force.

ClassNK has already issued SOF.

INVENT	OPV OF H	AZARDOUS MATERIALS
and the second sec	and a subscription of	
ATTACHMENT TO THE	INTERNATIONAL C	ERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS
Name o	f Ship	CLASSNK PRIME
Distinctive num		NK002
IMO nu	mber	
Port of R	egistry	
Gross To		40,000
Shipowner	Name	
	Address	-
IMO registered owner		
IMO company iden Date of Co		-
246 01 00		
	Completion date	of survey on which this document is based:
	Issued at:	er se en
	Date of Issued:	
	-	162
		ADDON
		(signature of duly authorized official issuing the certificate), and 2010
		(Seel or stamp of the suthority, as appropriate)

Statement of Fact

No. KC 09N2-XXXX

Date:

THIS IS TO CERTIFY that the undersigned Surveyor did, at the request of ---, examine the report of "Inventory of Hazardous Materials" of the following vessel:

_	MV ""
Flag	:
Port of Registry	:
Signal Letters	:
MO Number	:
Type of Vessel	:
Gross Tonnage	:
Shipbuilder	:

Name of Owners :

in accordance with "MEPC 58/3/2, Draft Guidelines for the Development of the Inventory of Hazardous Materials", and found satisfactory, excluding the materials listed in the remaining list of "Material declaration" and "Supplier's declaration of conformity" attached hereto.





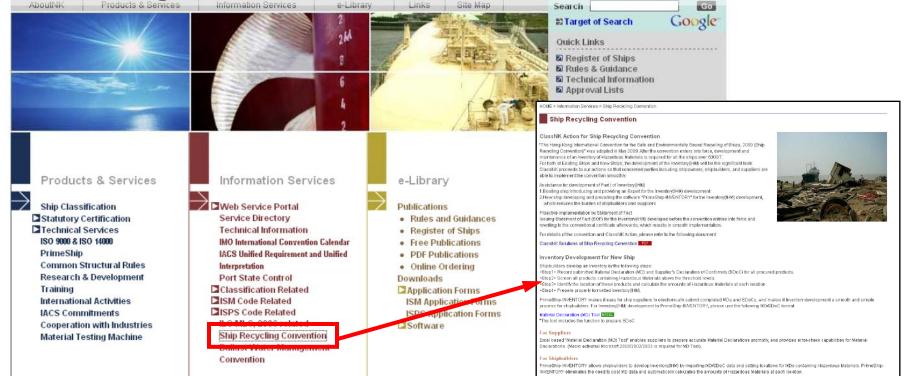


### Please visit the Ship Recycling page

### of ClassNK website at <a href="http://www.classnk.or.jp">http://www.classnk.or.jp</a>

**Caproviding various information** 110th Anniversary

#### Posting "Material Declaration Tool" for free download





# **Recycling of Ships**

ClassNK



Inventory of Hazardous Materials Identification No.

#### INVENTORY OF HAZARDOUS MATERIALS

ATTACHMENT TO THE INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

Name of Ship		CLASSNK PRIME
Distinctive number or letters		NK002
IMO number		-
Port of Registry		+
Gross Tonnage		40,000
Shipowner	Name	-
Shipowher	Address	
IMO registered owner identification number		
IMO company identification number		-
Date of Construction		

Completion date of survey on which this document is based:

Issued at:

Date of Issued:



This inventory was developed in accordance with the Guidelines for the development of the Inventory of Hazardous Materials.

# Thank you !