UK COLLEGIUM
OF THE SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS
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SHIP RECYCLING

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Vocabulary

- **SHIP DISMANTLING**
  used by Basel Convention; by Ministries of Environment; and for the time being by European Commission

- **SHIP BREAKING**
  used by ILO; and by Environmental NGOs (Greenpeace et al)

- **DEMOLITION** or **DEMO**
  used by brokers

- **DISPOSALS**
  often used in shipping statistics

- **SCRAPPING**
  used by shipowners; and by ILO/IMO/BC Joint Working Group

- **SHIP RECYCLING**
  used by IMO and by Ministries of Transport/Shipping

Is it political correctness that makes us say “recycling”?

Is it “recycling”?

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… and the proverbial sink

Some facts and figures (data by IHS Fairplay):

In 2010 the world fleet of ships over 500 GT was around 56,000 ships while the fleet over 3,000 GT was around 32,000 ships.

Ships have a limited life-span, reflecting economic, technical and occasionally regulatory considerations.

A realistic average life-span of a ship presently is 30 years and thus on average around 1,800 ships of over 500 GT, or 1,000 ships over 3,000 GT need to be recycled each year.

Five countries recycle around 97% of the world's tonnage:

ANNUAL VOLUMES OF RECYCLED TONNAGE (in Gross Tons - Data by IHS Fairplay)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
WORLD TOTAL	14,295,481	16,376,661	15,928,192	7,195,492	3,772,210	4,591,645	4,152,847	8,279,787	24,958,520	18,674,032
BANGLADESH	4,992,402	4,893,973	2,889,908	3,356,537	2,113,765	2,882,503	1,837,988	4,176,026	6,608,531	3,927,297
CHINA	2,509,792	3,138,838	5,582,476	1,538,067	151,089	254,146	340,738	927,762	7,737,730	4,723,151
INDIA	4,767,933	6,751,349	5,886,259	1,619,505	1,123,487	852,990	1,332,492	2,458,113	7,561,258	6,533,954
PAKISTAN	1,738,640	997,236	816,961	209,055	47,530	186,987	379,601	273,937	2,100,637	2,443,304
TURKEY	164,728	385,437	280,367	200,183	137,693	148,448	117,817	141,351	557,251	658,473
REST OF THE WORLD	121,986	209,828	472,221	272,145	198,646	266,571	144,211	302,598	393,113	387,853
% of big five to world total	99%	99%	97%	96%	95%	94%	97%	96%	98%	98%


Bangladesh, Chittagong
21/1/2009


China, Guangdong

India, Alang

Pakistan, Gadani

Turkey, Aliağa

Ship recycling contributes to sustainable development because virtually every part of a ship's hull, machinery, equipment, fittings and even furniture is re-used.

The industry also creates economic development for local and regional communities by the large-scale direct employment it brings, and by the additional employment and economic activity its associated industries generate, and also by the large scale of trading in second hand equipment and machineries that takes place.

There are also important economic benefits to the economies of the recycling countries from the recycling of steel, wood, machinery and equipment, that would otherwise have to be imported.

Furthermore, the well being of the recycling industries in Bangladesh, China, India, Pakistan and Turkey is very important to the world's shipping industry.

However, while the principle of ship recycling is a sound one, the working practices and environmental standards in recycling yards often leave much to be desired.

Pressure demanding a safer and a more environmentally friendly ship recycling industry has been building up over the past 15 or so years, and has found outlets amongst politicians and Administrations, who have looked for ways to regulate ship recycling with international common standards.

The first attempt at addressing the problem was to try to implement “The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal”, which was adopted in 1989, which entered in force in 1992, and which currently has 175 Parties.

The Basel Convention protects the human health and the environment against adverse effects that result from the generation and management of hazardous and other wastes. In particular, the Basel Convention focuses on regulating the transboundary movement of hazardous wastes in its effort to protect developing countries from importing hazardous wastes that they are unable to manage in an environmentally sound manner.

However, Basel does not establish a dedicated system for ships. Its provisions, and particularly its system of Prior Informed Consent designating a State of export, do not envisage ships. This has created difficulties in enforcing the Convention to end-of-life ships; especially in the European Union where the Basel Convention is implemented along with an amendment forbidding the export of hazardous wastes to non-OECD countries. Examples of cases where serious difficulties were experienced include *the Otapan*, *the Sea Beirut*, *the Sandrien*, *the Margaret Hill*, *the Tor Anglia*, *the Onyx*, and others.

As early as October 2004, the seventh Conference of the Parties to the Basel Convention, in its decision VII/26, invited IMO to consider the establishment in its regulations of mandatory requirements that ensure an equivalent level of control as established under the Basel Convention and also ensure the environmentally sound management of ship dismantling, and "which might include pre-decontamination within its scope".

IMO, having first developed and adopted in December 2003 Guidelines on Ship Recycling (voluntary), agreed in December 2005, through an Assembly resolution, to develop a "new legally binding instrument on ship recycling".

It took just over 3 years to develop and adopt in May 2009 the Convention. The diplomatic conference held in Hong Kong and attended by representatives of 63 States, the Secretariats of the Basel Convention and of ILO, and other stakeholders, adopted the “Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009”, which is also known as the **Hong Kong Convention** (here HKC).

In May 2010, Parties to Basel Convention commenced work to determine whether the HKC provides an equivalent level of control and enforcement as that provided by Basel Convention. Next week, COP 10 of the Basel Convention will meet in Cartagena in Colombia and will discuss this issue.

IMO hopes that there will be a positive and early conclusion of this work, so that the international community is encouraged to embrace the HKC as the single global standard for regulating the recycling of ships, in recognition that it was specifically developed to address the realities of the international maritime industry.

IMO is looking forward to the early entry into force of the HKC because:

- it will help ship recycling States to regulate the safety and environmental standards of their recycling industries on the basis of one common international norm that curbs the undesirable consequences of unchecked competition;
- it will improve the health and safety of ships' crews: (a) by controlling the installation of hazardous materials to ships; and (b) by making crews aware of risks onboard through the availability of the Inventory of Hazardous Materials;
- it will make it possible for the shipping industry to help solve the problem of substandard ship recycling, by requiring that ships are recycled in compliant yards and in this way by making shipowners contribute to the cost of compliance to the standards of the Convention; and
- it will provide the international community with a global standard that can be adjusted and improved in the future.

The structure of the Hong Kong Convention

Structure of the Hong Kong Convention

The Convention includes:

- 21 Articles, establishing the main legal mechanisms

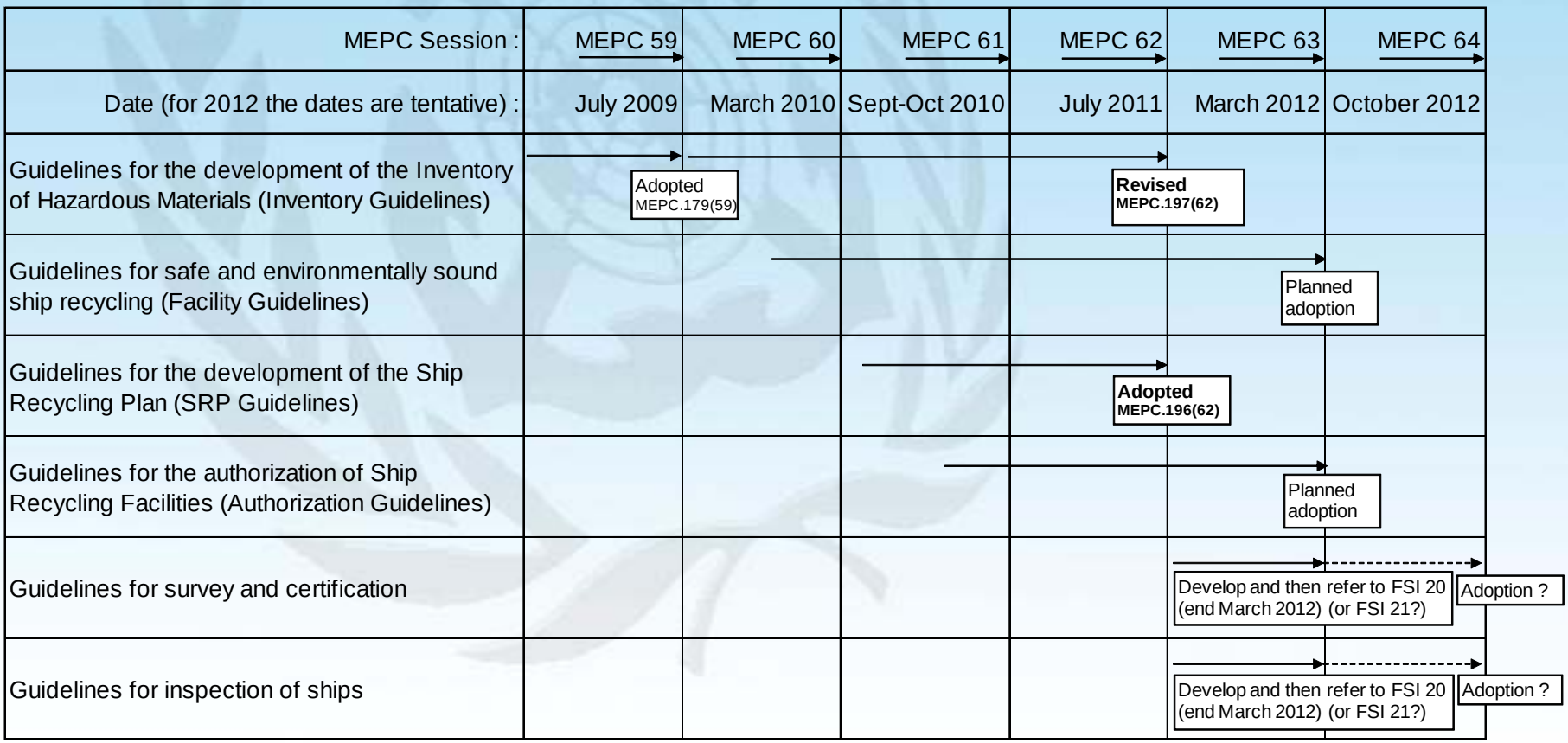
- 25 regulations, containing technical requirements, divided in four chapters:

    1. General (regulations 1-3)
    2. Requirements for ships (regulations 4-14)
    3. Requirements for ship recycling facilities (regulations 15-23)
    4. Reporting requirements (regulations 24-25)

- 7 appendices, with lists of Hazardous Materials, forms for certificates etc

Separately, 6 non-mandatory guidelines are currently being developed providing clarifications, interpretations, and uniform procedures for technical issues arising from the provisions of the Convention.

Schedule for the development of the guidelines associated with the Hong Kong Convention



Requirements for ships in service

Parties (i.e. countries that have ratified the HKC) shall ensure that hazardous materials listed in Appendix 1 to the Convention will not be used in their shipyards, nor will they be installed on their ships.

All ships, throughout their operational lives, shall be provided with an Inventory of Hazardous Materials (IHM) identifying and quantifying in Part I any materials listed in the HKC's Appendix 1 and Appendix 2 (mandatory for new ships), taking into account the Inventory Guidelines (see resolution MEPC.197(62)).

Existing ships (in service at the time of HKC's entry into force) shall have onboard an IHM no later than 5 years after entry into force, or when the ship goes for recycling if that is earlier.

The IHM shall be updated after any installations of materials listed in Appendix 2 of the HKC.

All ships shall undergo renewal surveys verifying that the IHM continues to meet the requirements of the HKC and shall be issued with the International Certificate on Inventory of Hazardous Materials (ICIHM) with 5 years' maximum validity.

APPENDIX 1

CONTROLS OF HAZARDOUS MATERIALS

Hazardous Material	Definitions	Control measures
Asbestos	Materials containing asbestos	For all ships, new installation of materials which contain asbestos shall be prohibited.
Ozone-depleting substances	Ozone-depleting substances means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A,B,C or E to the said Protocol in force at the time of application or interpretation of this Annex. Ozone-depleting substances that may be found on board ship include, but are not limited to: Halon 1211 Bromochlorodifluoromethane Halon 1301 Bromotrifluoromethane Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2) CFC-11 Trichlorofluoromethane CFC-12 Dichlorodifluoromethane CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane CFC-115 Chloropentafluoroethane	New installations which contain ozone-depleting substances shall be prohibited on all ships, except that new installations containing hydrochlorofluorocarbons (HCFCs) are permitted until 1 January 2020.
Polychlorinated biphenyls (PCB)	"Polychlorinated biphenyls" means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to ten chlorine atoms	For all ships, new installation of materials which contain Polychlorinated biphenyls shall be prohibited.
Anti-fouling compounds and systems	Anti-fouling compounds and systems regulated under Annex I to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention) in force at the time of application or interpretation of this Annex.	1. No ship may apply anti-fouling systems containing organotin compounds as a biocide or any other anti-fouling system whose application or use is prohibited by the AFS Convention. 2. No new ships or new installations on ships shall apply or employ anti-fouling compounds or systems in a manner inconsistent with the AFS Convention.

APPENDIX 2

MINIMUM LIST OF ITEMS FOR THE INVENTORY OF HAZARDOUS MATERIALS

Any Hazardous Materials listed in Appendix 1
Cadmium and Cadmium Compounds
Hexavalent Chromium and Hexavalent Chromium Compounds
Lead and Lead Compounds
Mercury and Mercury Compounds
Polybrominated Biphenyl (PBBs)
Polybrominated Diphenyl Ethers (PBDEs)
Polychlorinated Naphthalenes (more than 3 chlorine atoms)
Radioactive Substances
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)

EXAMPLE OF AN INVENTORY OF HAZARDOUS MATERIALS

from IMO's Inventory guidelines, resolution MEPC.197(62)

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

No.	Application of paint	Name of paint	Location *1	Materials (classification in appendix 1)	Approx. quantity		Remarks
1	AF paint	Unknown paints	Flat bottom	TBT	60.00	kg	Confirmed by sampling
2							
3							

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 *1	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Main engine	Lower floor	Asbestos	Exh. pipe packing	3.50	kg	
2	Aux. boiler	3rd deck	Asbestos	Unknown packing	10.00	kg	PCHM (potentially containing Hazardous Material)
3	Piping/flange	Engine-room	Asbestos	Packing	50.00	kg	PCHM
4	Ref. provision plant	2nd deck	HCFC	Refrigerant (R22)	20.00	kg	
5	Batteries	Navig. Bridge deck	Lead		96.00	kg	

I-3 Structure and hull containing materials listed in Table A and Table B of appendix 1 of the Guidelines

No.	Name of structural element	Location *1	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Back deck ceiling	Upper deck	Asbestos	Engine-room ceiling (A class)	3.80	kg	Confirmed by sampling
2							
3							

Part II OPERATIONALLY GENERATED WASTE

No.	Location[1)]	Name of item (classification in appendix 1) and detail (if any) of the item	Approx. quantity		Remarks
1	Garbage locker	Garbage (food waste)	35.00	kg	
2	Bilge tank	Bilgewater	15.00	m^3	
3	No.1 cargo hold	Dry cargo residues (iron ore)	110.00	kg	
4	No.2 cargo hold	Waste oil (sludge) (crude)	120.00	kg	
5	No.1 ballast tank	Ballast water	2,500.00	m^3	
		Sediments	250.00	kg	

Part III STORES

III-1 Stores

No.	Location[1)]	Name of item (classification in appendix 1)	Unit quantity		Figure		Approx. quantity		Remarks[2)]
1	No.1 fuel oil tank	Fuel oil (heavy fuel oil)	-		-		100.00	m^3	
2	CO_2 room	CO_2	100.00	kg	50	bottles	5,000.00	kg	
3	Workshop	Propane	20.00	kg	10	pcs	200.00	kg	
4	Medicine locker	Miscellaneous medicines	-		-		-		Details are shown in the attached list.
5	Paint stores	Paint, xx Co., #600	20.00	kg	5	pcs	100.00	kg	Cadmium containing.

III-2 Liquids sealed in ship's machinery and equipment

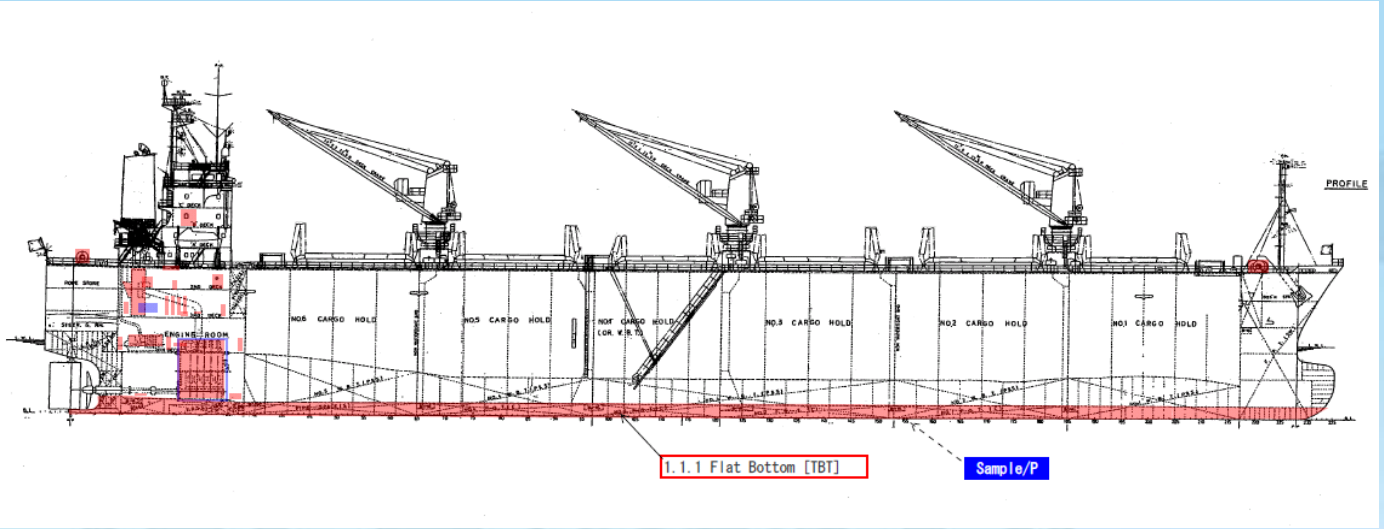
……..

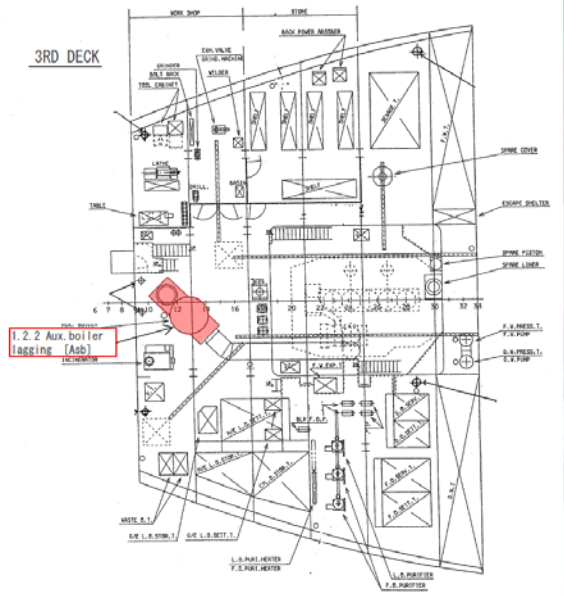
III-3 Gases sealed in ship's machinery and equipment

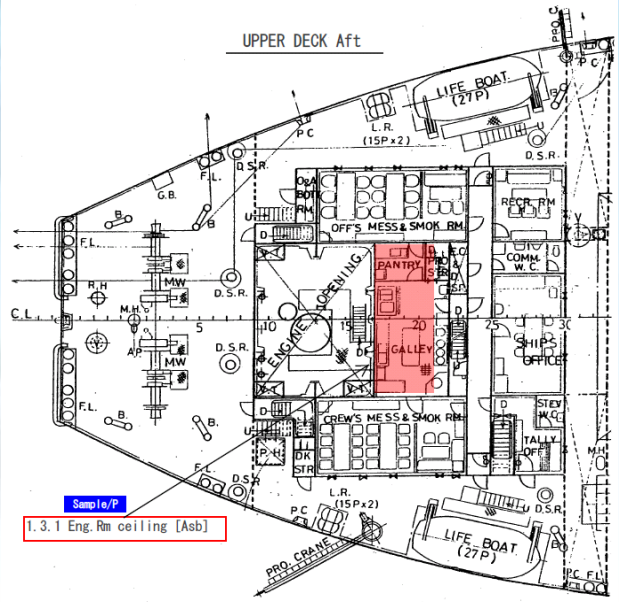
……..

III-4 Regular consumable goods potentially containing Hazardous Materials

…… **etc**


PROFILE
ENGINE ROOM
NO6 CARGO HOLD
NO5 CARGO HOLD
NO4 CARGO HOLD
NO3 CARGO HOLD
NO2 CARGO HOLD
NO1 CARGO HOLD
1.1.1 Flat Bottom [TBT]
Sample/P


3RD DECK
1.2.2 Aux.boiler Tagging [Asb]


UPPER DECK Aft
LIFE BOAT (27P)
L.R. (15P×2)
OFF'S MESS & SMOK RM
RECR RM
PANTRY
GALLEY
CREW'S MESS & SMOK RM
SHIP'S OFFICE
COMM. W.C.
ENGINE CASING
PRO. CRANE
Sample/P
1.3.1 Eng.Rm ceiling [Asb]

Requirements for ships preparing for recycling:

The shipowner of a ship flying the flag of a Party has to:

- recycle the ship in recycling facilities of a Party State;
- select an authorized recycling facility which must be capable to deal with the types and quantities of hazardous materials contained in the ship (as per IHM);
- complete Part II (for operationally generated wastes) and Part III (for stores) of the IHM;
- provide the facility with copies of the IHM, the ICIHM, and with any other relevant information (with which the facility will develop the Ship Recycling Plan);
- notify the Administration (flag State) of the intention to recycle the ship;
- (once the approved Ship Recycling Plan is received from the facility) arrange for a final survey to verify the IHM and that the SRP reflects correctly the IHM and that it contains other required information;
- following the final survey obtain the International Ready for Recycling Certificate (IRRC) from the flag State or its Recognized Organization.

Requirements for recycling States

- establish legislation implementing the HKC;
- designate one or more Competent Authorities (CA) and a single contact point to be used by interested entities;
- establish a mechanism for ensuring that SRF comply with the HKC; and
- establish a mechanism for authorizing SRF. (This authorization also provides information on any limitations imposed on the SRF as condition for its authorization. The SRF may be limited by way of the types or sizes of ships they recycle and by way of the categories and quantities of hazardous materials they can safely process.)

APPENDIX 5

FORM OF THE AUTHORIZATION OF SHIP RECYCLING FACILITIES

Document of Authorization to conduct Ship Recycling (DASR) in accordance with the requirements of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

Issued under the provision of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of:

……...

(Name of the State)

by……..

(Full designation of the Competent Authority under the Convention)

Name of Ship Recycling Facility	
Distinctive Recycling Company identity No.	
Full address of Ship Recycling Facility	
Primary contact person	
Phone number	
E-mail address	
Name, address, and contact information of ownership company	
Working language(s)	

This is to verify that the Ship Recycling Facility has implemented management systems, procedures and techniques in accordance with Chapters 3 and 4 to the Annex to the Convention.

This authorization is valid until …… and is subject to the limitations identified in the attached supplement.

This authorization is subject to amendment, suspension, withdrawal, or periodic renewal in accordance with regulation 16 of the Annex to the Convention.

Issued at .....

(*Place of issue of the authorization*)

(dd/mm/yyyy) ....

(*Date of issue*) (*Signature of duly authorized official issuing the authorization*)

.....

(Typed name and title of duly authorized official issuing the authorization)

(*Seal or stamp of the authority, as appropriate*)

SUPPLEMENT TO:

Document of Authorization to undertake Ship Recycling (DASR) in accordance with the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

1 GENERAL TERMS

…….

1.1 Acceptance of ships

For ships to which the Convention applies and ships treated similarly pursuant to Article 3.4 of the Convention, the Ship Recycling Facility can only accept a ship for recycling in accordance with regulation 17 of the Annex to the Convention.

1.3 Safe-for-hot work and Safe-for-entry conditions

The Ship Recycling Facility is capable of establishing, maintaining and monitoring Safe-for-hot work and Safe-for-entry conditions throughout the Ship Recycling process.

1.4 Management of Hazardous Materials

The Ship Recycling Facility is designed, constructed, operated, and required to ensure that all Hazardous Materials' management shall be safe and environmentally sound in compliance with the Convention and with all relevant local or national regulations/requirements.

1.5 Map and location of Ship Recycling operations

A map of the boundary of the Ship Recycling Facility and the location of Ship Recycling operations within it, is attached.

2 CAPABILITY OF SHIP RECYCLING FACILITY

2.1 Size of ships

The Ship Recycling Facility is authorized to accept a ship for recycling subject to the following size limitations:

Maximum Size		Other Limitations
Length		
Breadth		
Lightweight		

2.2 Safe and Environmentally Sound Management of Hazardous Materials

The Ship Recycling Facility is authorized to accept a ship for recycling that contains Hazardous Materials as specified in the following table subject to the conditions noted below:

Hazardous Material(*4)	Management of Hazardous Materials			Authorization/Limitations
	Removal Y/N (*2)	Storage Y/N	Process (*1) Y/N (*3)	
Asbestos				
Ozone-depleting substances				
Polychlorinated biphenyls (PCB)				
Anti-fouling compounds and systems				
Cadmium and Cadmium Compounds				
Hexavalent Chromium and Hexavalent Chromium Compounds				
Lead and Lead Compounds				
Mercury and Mercury Compounds				
Polybrominated Biphenyl (PBBs)				
Polybrominated Diphenyl Ethers (PBDEs)				
Polychlorinated Naphthalenes (more than 3 chlorine atoms)				
Radioactive substances				
Certain Shortchain Chlorinated Paraffins (Alkanes, C10-C13, chloro)				
Hazardous liquids, residues and sediments				
Paints and coatings that are highly flammable and/or lead to toxic release				
Other Hazardous Materials not listed above and that are not a part of the ship structure (specify)				

Notes: *1 Process means the processing of Hazardous Materials in the Ship Recycling Facility, such as:

a. incineration of Hazardous Materials;
b. reclamation of Hazardous Materials; and
c. treatment of oily residues.

*2 If Yes (Y), indicate in the Ship Recycling Facility Plan the responsible personnel authorized to carry out the removal, with the certificate number or other relevant information.

*3 If No (N), describe in the Ship Recycling Plan where the Hazardous Materials are to be processed/disposed.

*4 These Hazardous Materials are specified in Appendices 1 and 2 and regulation 20 of the Convention.

Requirements for Ship Recycling Facilities (general)

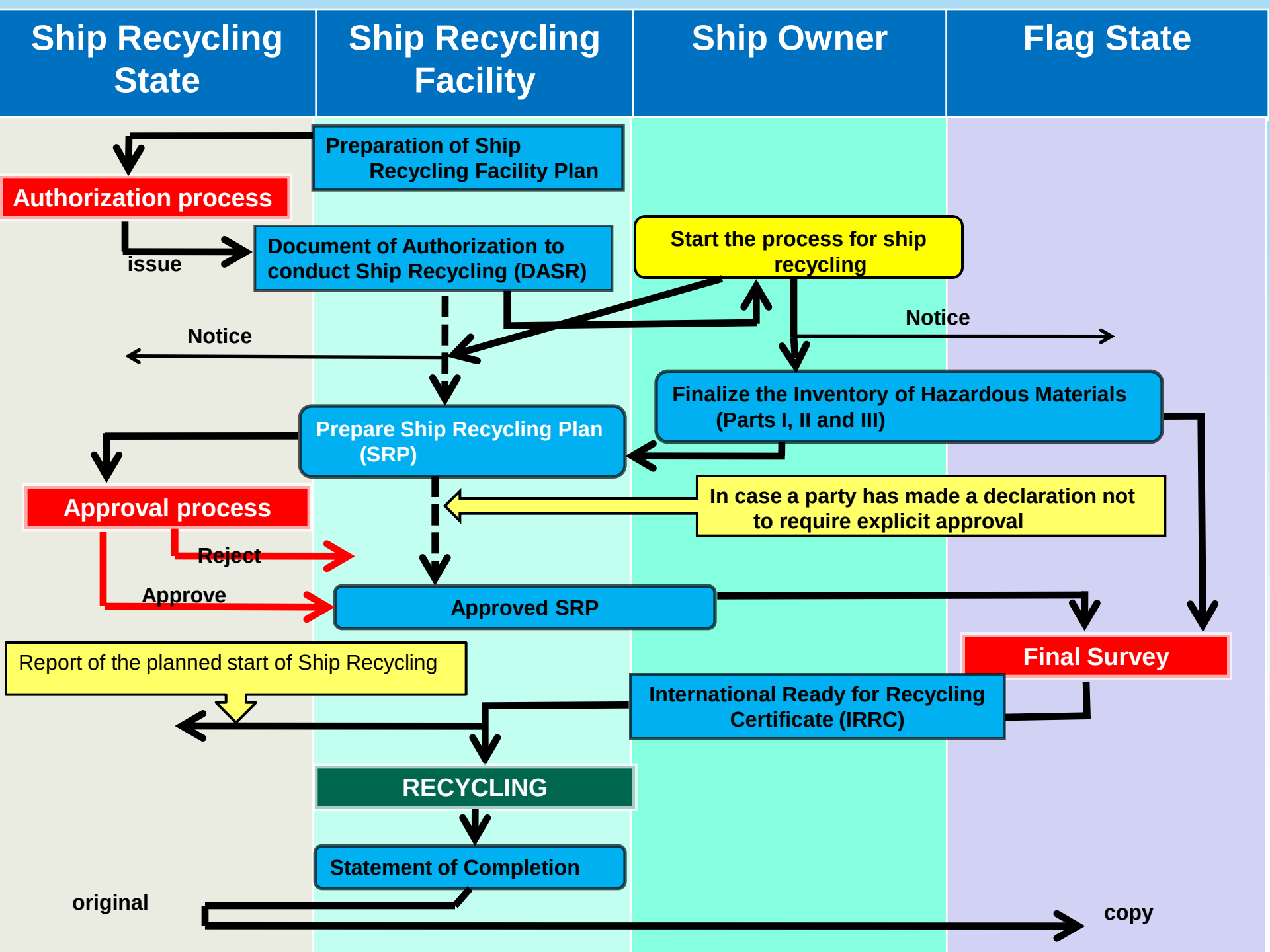
- SRF shall develop and implement a Ship Recycling Facility Plan (SRFP) that covers: worker safety and training; protection of human health and the environment; roles and responsibilities of personnel; emergency preparedness and response; and systems for monitoring, reporting and record-keeping;

- SRF located within the jurisdiction of a Party shall be authorized by that Party. The authorization shall have 5 years' maximum validity; and

- SRF shall only accept ships that comply with the Convention, or which meet its requirements. Furthermore SRF shall only accept ships they are authorized to recycle.

Requirements for Ship Recycling Facilities (ship specific)

- a ship-specific Ship Recycling Plan (SRP) shall be developed according to the SRP Guidelines (see resolution MEPC.196(62)) taking into the account information provided by the shipowner (i.e. IHM, ICIHM, etc);
- a SRF preparing to receive a ship shall notify its CA (the notification shall include details of the ship, its owner and the IHM and the draft SRP);
- the SRP shall be approved (tacitly or explicitly) by the CA and then shall be made available to the ship for its final survey;
- when the ship has acquired the IRRC, the SRF shall report to its CA the planned start of recycling (the report shall include a copy of the IRRC; recycling of the ship shall not start prior to the submission of this report.)


Ship Recycling State
Ship Recycling Facility
Ship Owner
Flag State
Preparation of Ship Recycling Facility Plan
Authorization process
issue
Document of Authorization to conduct Ship Recycling (DASR)
Start the process for ship recycling
Notice
Notice
Finalize the Inventory of Hazardous Materials (Parts I, II and III)
Prepare Ship Recycling Plan (SRP)
Approval process
In case a party has made a declaration not to require explicit approval
Reject
Approve
Approved SRP
Final Survey
Report of the planned start of Ship Recycling
International Ready for Recycling Certificate (IRRC)
RECYCLING
Statement of Completion
original
copy

What the critics say

A group of critics of the Hong Kong Convention have expressed strong dissatisfaction over two issues**:**

the Hong Kong Convention does not ban beaching;

and

the Hong Kong Convention does not mandate pre-cleaning

Let us next examine the practicality of these claims.

Beaching

The Hong Kong Convention does not ban the beaching method of recycling.

The developers of the Convention realized that banning of beaching would be meaningless, since seventy percent of the world's recycling capacity relies on the beaching method.

Instead, the Convention addresses the reduction of the risks to human health and safety and to the environment through requirements on worker safety and training; requirements for the protection of human health and the environment; for emergency preparedness and response; and systems for monitoring, reporting and record-keeping.

In this way IMO intends that the Hong Kong Convention should become the universal standard for regulating ship recycling activities, whether these are conducted in countries that employ beaching, or countries employing more advanced methods.

Pre-cleaning of hazardous wastes

The HKC does not require that all ships arrive at the recycling facilities of developing countries pre-cleaned of all hazardous materials.

This is because a ship that is pre-cleaned is unseaworthy, since its insulation is stripped, its electrical cables are removed, etc. It is therefore necessary to tow pre-cleaned ships to their place of recycling. And if pre-cleaning was to be done only in OECD (note: there is no international requirement for this, only a European one), it is highly unlikely that the economics, practicality and hazards of towing will allow many ships to be recycled in South Asia, or China.

Instead, HKC recognizes that pre-cleaning can take place in any country, and not only within the OECD, and therefore empowers the recycling State to authorize or restrict each recycling yard according to its capability. In this way, a ship may either be pre-cleaned in the facility where the recycling takes place, or if the recycling facility is not suitably equipped, the pre-cleaning can be done at another facility (possibly nearby) that is equipped and authorized to do so.

Of course, a recycling State can, through the HKC, prohibit some or all its facilities from receiving any hazardous materials. However in the later case it will curtail ship recycling business.

End of main part of presentation

Addendum 1

How will the Hong Kong Convention enter into force ?

Article 17 Entry into force

1 This Convention shall enter into force 24 months after the date on which the following conditions are met:

.1 not less than 15 States have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 16;

.2 the combined merchant fleets of the States mentioned in paragraph 1.1 constitute not less than 40 per cent of the gross tonnage of the world's merchant shipping; and

.3 the combined maximum annual ship recycling volume of the States mentioned in paragraph 1.1 during the preceding 10 years constitutes not less than 3 per cent of the gross tonnage of the combined merchant shipping of the same States.

and expressed in numbers:

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
WORLD FLEET	574,551,264	585,583,396	605,218,368	633,321,120	675,115,956	721,855,399	774,936,508	830,704,412	882,634,804	957,982,304
40% of WORLD FLEET	229,820,506	234,233,358	242,087,347	253,328,448	270,046,382	288,742,160	309,974,603	332,281,765	353,053,922	383,192,922
3% of 40%	6,894,615	7,027,001	7,262,620	7,599,853	8,101,391	8,662,265	9,299,238	9,968,453	10,591,618	11,495,788

In 2011 the requirements for entry into force of the HKC (based on published data for 2010) are that it has to be ratified by at least:

- 15 States;
- whose fleets amount to at least 383,192,922 gross tonnage (GT); and
- whose recycling facilities' combined maximum annual ship recycling volume is at least 11,495,788 GT.

In 2012 the criteria will change according to the then published figure of the total GT of the world fleet for 2011 (to be published in April or May 2012).

2010 MERCHANT FLEETS - BY COUNTRY OF REGISTRATION			
REGISTRATION	**TOTALS** (data by IHS Fairplay)		
	No.	**GT**	**GT as % of World**
EU TOTALS	16,878	220,038,946	23.0%
CHINA	4,080	34,705,141	
HONG KONG	1,736	55,543,246	9.4%
MACAO	2	2,321	
JAPAN	6,150	16,857,860	1.8%
NORWAY	1,474	2,700,520	1.7%
NORWAY (NIS)	521	13,828,168	
TURKEY	1,334	5,946,844	0.6%
TOTALS OF ABOVE	**32,175**	**349,623,046**	36.5%
PANAMA	7,986	201,264,453	21.0%
LIBERIA	2,726	106,708,344	11.1%
MARSHALL ISLANDS	1,622	62,011,182	6.5%
BAHAMAS	1,384	50,369,836	5.3%
SINGAPORE	2,667	44,869,918	4.7%
BANGLADESH	331	880,074	0.1%
INDIA	1,404	9,244,245	1.0%
PAKISTAN	52	340,413	0.0%

Calculation of the combined maximum annual recycling volume (GT) using data for the preceding 10 years (as published in IHS Fairplay's World Casualty Statistics)

TABLE 7C DISPOSALS - BY COUNTRY OF BREAKING 2009

COUNTRY OF BREAKING	TOTALS			CARGO CARRYING SHIPS				SHIPS OF MISCELLANEOUS ACTIVITIES		
	No.	GT	Age	No.	GT	*Dwt*	Age	No.	GT	Age
ARGENTINA	8	28,697	36	2	25,621	40,483	28	6	3,076	39
BANGLADESH	196	6,608,531	28	195	6,595,035	10,722,558	28	1	13,496	27
BELGIUM	20	5,267	24	..	..	..	..	20	5,267	24
BRAZIL	2	467	41	..	..	..	..	2	467	41
BULGARIA	1	2,406	44	1	2,406	3,310	44	..	..	..
CANADA	1	161	52	..	..	..	..	1	161	52
CAPE VERDE	1	1,290	41	1	1,290	1,078	41	..	..	..
CARIBBEAN	1	550	64	..	..	..	..	1	550	64
CHINA, PEOPLE'S REPUBLIC OF	301	7,737,730	29	298	7,734,315	8,038,978	29	3	3,415	37
DENMARK	21	15,829	36	5	11,402	16,238	33	16	4,427	37
EGYPT	2	2,143	35	2	2,143	2,846	35	..	..	..
FRANCE	1	3,395	39	1	3,395	5,928	39	..	..	..
GREECE	1	487	45	1	487	1,002	45	..	..	..
INDIA	425	7,561,258	30	418	7,267,604	9,098,621	30	7	293,654	31
INDONESIA	1	6,695	32	1	6,695	8,520	32	..	..	..
JAPAN	2	990	32	..	..	..	..	2	990	32
KOREA, SOUTH	1	673	30	..	..	..	..	1	673	30
LITHUANIA	1	721	24	..	..	..	..	1	721	24
NETHERLANDS	8	4,185	33	1	2,493	1,583	28	7	1,692	34
NIGERIA	1	4,015	26	1	4,015	6,701	26	..	..	..
PAKISTAN	101	2,100,637	30	101	2,100,637	3,324,773	30	..	..	..
PERU	1	6,892	36	1	6,892	9,218	36	..	..	..
PORTUGAL	1	3,466	33	1	3,466	6,072	33	..	..	..
RUSSIA	7	5,318	31	..	..	..	..	7	5,318	31
SOUTH AFRICA	1	585	33	..	..	..	..	1	585	33
SPAIN	18	14,206	33	5	9,510	12,923	35	13	4,696	33
TRINIDAD & TOBAGO	1	400	74	1	400	400	74	..	..	..
TURKEY	117	557,251	37	113	551,808	646,141	37	4	5,443	36
UKRAINE	1	717	30	..	..	..	..	1	717	30
UNITED KINGDOM	2	2,411	28	2	2,411	3,224	28	..	..	..
UNITED STATES OF AMERICA	10	10,868	41	1	649	610	37	9	10,219	41
UNKNOWN	40	270,279	32	22	263,866	413,067	32	18	6,413	32
GRAND TOTAL	**1,295**	**24,958,520**	**30**	**1,174**	**24,596,540**	**32,364,274**	**30**	**121**	**361,980**	**33**

	ANNUAL SHIP RECYCLING VOLUME OF THE LARGEST SHIP RECYCLING COUNTRIES (Data by IHS - Fairplay)										Max.ann'l recl.vol.
RECYCLING STATE	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Max 2001-2010
BANGLADESH	4,992,402	4,893,973	2,889,908	3,356,537	2,113,765	2,882,503	1,837,988	4,176,026	6,608,531	3,927,297	**6,608,531**
CHINA	2,509,792	3,138,838	5,582,476	1,538,067	151,089	254,146	340,738	927,762	7,737,730	4,723,151	**7,737,730**
INDIA	4,767,933	6,751,349	5,886,259	1,619,505	1,123,487	852,990	1,332,492	2,458,113	7,561,258	6,533,954	**7,561,258**
PAKISTAN	1,738,640	997,236	816,961	209,055	47,530	186,987	379,601	273,937	2,100,637	2,443,304	**2,443,304**
TURKEY	164,728	385,437	280,367	200,183	137,693	148,448	117,817	141,351	557,251	658,473	**658,473**
Sum of top five recycling States	14,173,495	16,166,833	15,455,971	6,923,347	3,573,564	4,325,074	4,008,636	7,977,189	24,565,407	18,286,179	
Rest of the world	121,986	209,828	472,221	272,145	198,646	266,571	144,211	302,598	393,113	387,853	
WORLD TOTAL	14,295,481	16,376,661	15,928,192	7,195,492	3,772,210	4,591,645	4,152,847	8,279,787	24,958,520	18,674,032	
% of top five to world totals	99%	99%	97%	96%	95%	94%	97%	96%	98%	98%	10 year average: **97%**

In the last decade around 97% of the world's recycled tonnage has been recycled by the same five countries. Three of these countries have large capacities (7.7MGT; 7.6MGT & 6.8MGT); one has medium capacity (2.4MGT); and one has small capacity (0.7MGT).

Ratification by two large recycling capacity countries is more than sufficient for the Convention's entry into force (11.5MGT).

With an average annual increase of the world fleet by 5%, ratification by two large recycling capacity countries should be sufficient until 2015 or beyond.

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Addendum 2

Interim measures for introducing technical requirements of the Hong Kong Convention on a voluntary basis

The conditions for entry into force of the Hong Kong Convention might take a few years to be met.

The diplomatic Conference that adopted the Hong Kong Convention also adopted a resolution inviting Member States and the industry to voluntarily implement relevant technical requirements of the Convention in the interim period up to the Convention's entry into force.

How can this work?

Shipowners' associations (eg, ICS, BIMCO, INTERTANKO) have already agreed to support the voluntary implementation of the technical requirements of the HKC and already many ships are being supplied with IHMs. However, human nature and commercial realities make it highly unlikely that all shipowners will act in unison to establish a uniform and global implementation of any interim measures.

It is very difficult for a State, acting individually, to implement before the entry into force of the Convention its technical standards to ships and to recycling facilities.

On the other hand, a significant number of flag States acting in unison can develop, together with the administration of one (or more) interested recycling State(s), an effective and commercially sustainable package of interim measures.

The European Union could conceivably take such an initiative and create a successful package of measures based on the very same technical standards that will apply after the entry into force of the Hong Kong Convention. This way EU can introduce governance to the field of ship recycling, which would otherwise remain unregulated in the interim period.

The following are key technical requirements of the Hong Kong Convention, some of which may be considered as suitable interim measures:

1 prohibition of installation or use of Hazardous Materials listed in its Appendix 1;

2 provision of the Inventory of Hazardous Materials: (a) to new ships; (b) to existing ships; and (c) to ships going for recycling;

3 Safe-for-hot work and Safe-for-entry: (a) obligations for shipowners; and (b) obligations for ship recycling facilities;

4 preparation of a Ship Recycling Plan for ships destined for recycling;

5 compliance of ship recycling facilities to the Convention's safety, health and environmental standards;

6 authorization of Ship Recycling Facilities by the relevant Competent Authority;

7 surveying and certification of ships by their flag States; and

8 notification and reporting requirements to the recycling State and to the flag State.

IMO's Secretariat is also encouraging discussions between the recyclers' associations and the administrations of Bangladesh, China, India, Pakistan, and Turkey, so that the global ship recycling industry may also start the step by step implementation of the technical requirements of the Hong Kong Convention the soonest possible.

In this spirit, in May 2010, the Pattaya Workshop brought together for the first time representatives of the ship recycling associations of the five States, as well as representatives of national and international shipowners' associations, senior officials of the administrations of the five recycling States and of other States, and experts from UN bodies, from IGOs and NGOs.

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Addendum 3

Will the Hong Kong Convention change the market?

Some recyclers are worried that, after the Convention's entry into force, the Convention will act as a barrier restricting:

- Convention facilities to recycle only Convention ships; and
- non-Convention facilities to recycle only non-Convention ships

and therefore, if a country ratifies the Convention, this would commit and restrict its recyclers to work only with Convention ships (and *vice-versa*).

Also, some shipowners are worried that, if their ships are flying the flag of a Party, after the Convention's entry into force there may not be enough approved recycling capacity, and this would depress unnaturally scrap prices (and *vice-versa*).

As will be discussed in the next two slides, normal commercial forces will ensure that the Convention will not operate as a barrier, nor will it depress, or inflate, scrap prices unnaturally.

(a) recycling of **non-Party ships** in **Party facilities**?

According to regulation 17 of the Hong Kong Convention, ship recycling facilities in Party States can only accept ships that:

- comply with the Convention (Party ships); or
- meet the requirements of the Convention (non-Party ships).

The cost for a non-Party ship to meet the requirements of the Convention is estimated at not more that US$30,000. For a Panamax (about 10,000 LDT) the cost of meeting the requirements of the convention therefore translates to around US$3 per LDT, which represents a very modest cost.

Therefore, either for corporate social responsibility reasons, or simply because a Party recycling facility may be paying more than $3 per LDT than a non-Party facility, a non-Party ship may legally cross the boundary into a Party facility.

and so, the first point is that after entry into force of the Hong Kong Convention **non-Party ships will be able to be recycled in Party recycling facilities**.

(b) recycling of **Party ships** in **non-Party facilities**?

According to regulation 8 of the Hong Kong Convention, Party ships can only be recycled at Party recycling facilities.

However, there is no legal restriction to selling; deregistering; and changing flag of a merchant ship. Therefore a Party ship can legally become non-Party ship and then be recycled at a non-Party facility.

The cost for a ship to change flag is around US$10,000, which for a Panamax ship translates to around US$1 per LDT, representing a negligible cost to its owner.

Therefore, the second point is that we can easily envisage **a Party ship** changing flag and thus legally becoming a non-Party ship in order to be **recycled at a non-Party facility.**

Therefore:

Party facilities will be able to accept:

Party ships
and
non-Party ships (at compliance cost to owner of about $30K)

non-Party facilities will be able to accept:

Party ships (at flagging-out cost to owner of about $10K)
and
non-Party ships

Thus, the Convention will not be able to act as a barrier, nor should it distort the scrap market prices.

thank you for your attention

The views expressed in this presentation are those of its author