

IMO and Anthropogenic Underwater Noise

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- UN specialized agency dealing with international shipping
- Headquarters in London
- Safety and security of shipping and prevention of marine pollution by ships
- 174 Member States and 3 Associate Members
- 79 NGOs and 64 IGOs
- Annual budget £30+ million
- Secretariat – staff of 250, more than 50 nationalities

The International Maritime Organization

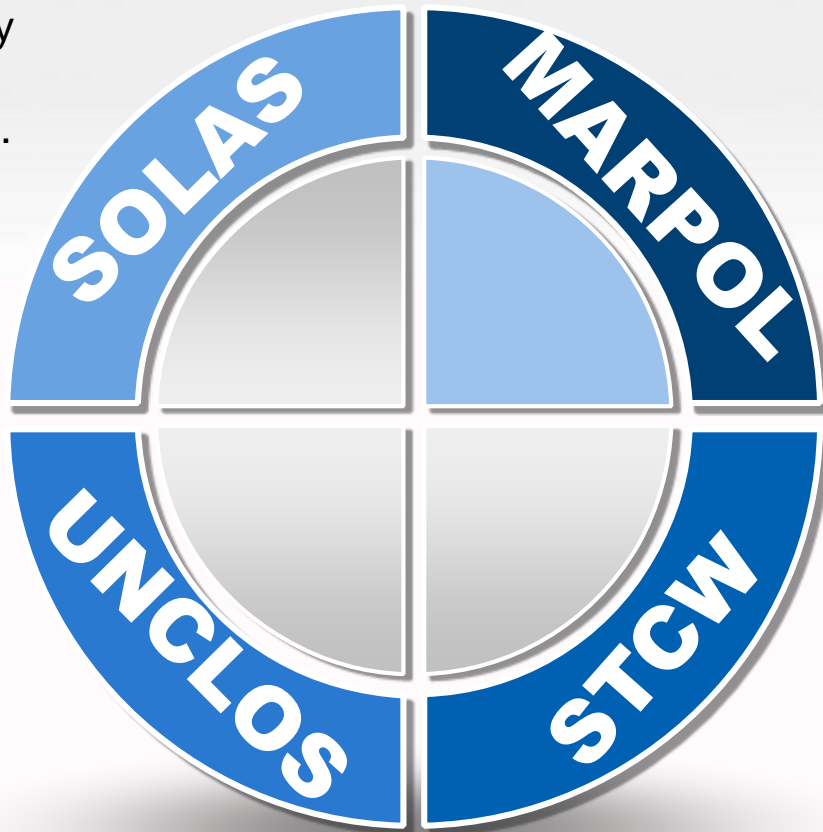
- IMO's mandate covers a wide range of issues to prevent and control pollution caused by ships and to mitigate the effects of any damage that may occur as a result of maritime operations and accidents
- IMO has promoted the adoption of some 50 conventions and protocols and adopted more than 1,000 codes and recommendations concerning maritime safety and security, the prevention of pollution and related matters.

The regulatory framework



Interplay Safety – Environment - People and UNCLOS

Safety requirements apply to all ships which are subject to the Convention.



Provides the mandatory environmental protection level with zero discharge requirements in some areas.

Legal framework governing the rights and responsibilities of nations in their use of ocean space.

Guidance and recommendations for training and competency of officers and masters on ships.



IMO's work on environmental issues

Marine Environment Protection Committee (MEPC)

IMO's senior technical body on marine pollution related matters, aided in its work by a number of Sub-Committees

Sub-Committee on Pollution Prevention and Response (PPR)

Prevention and control of pollution of the marine environment: air pollution including Black Carbon; recycling of ships; evaluation of safety and pollution hazards of liquid substances in bulk transported by ships; control and management of harmful aquatic organisms in ballast water and biofouling; pollution preparedness, response and cooperation for oil, hazardous and noxious substances

Sub-Committees under MEPC and MSC

Sub-Committee on Implementation of IMO Instruments (III)
Sub-Committee on Carriage of Cargoes and Containers (CCC)





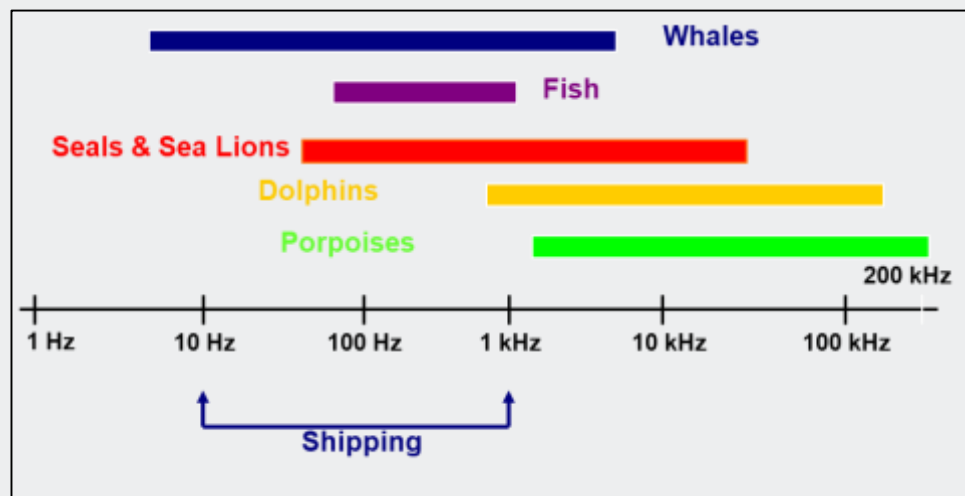
IMO's work on environmental issues

- Ballast water management
- Anti-fouling systems and biofouling
- Air pollution
- Energy efficiency
- Greenhouse gas (GHG) emissions
- Action Plan to address marine plastic litter from ships
- Use and carriage of HFO in the Arctic
- Special areas and PSSAs
- Pollution prevention, preparedness and response
- Technical cooperation activities
- **London Convention and Protocol**



Underwater Sound and Shipping

- Shipping forms a “..significant contribution to **overall ambient noise at low frequencies...**” (MEPC 58/19, 2008) – chronic source
- Industry forecast **doubling or tripling** of amount of cargo shipped by 2025 (MEPC 57/INF.4, 2008), hence increased noise
- UW noise know to have negative impacts on marine life
- Some cetaceans use same low frequency bands – resulting in possible ‘auditory masking’



IMO Action - Noise

- IMO work on noise began in the early 1980's
- Code of noise levels for personnel on board of ships, 1981 and 2001 (A.468(XII)) and MSC/Circ.1014)
- Recognizes: limited benefits to marine life and did not address the potential adverse impacts to marine life
- Code updated in 2012 as resolution MSC.337(91)



IMO Action – Underwater Noise

- **2004:** MEPC, in response to a growing body of research on the issue, commenced discussions on the harmful effects of UW noise on marine life
- **2007-2008:** United States led initiative to have IMO address underwater noise
- **2008-2011:** MEPC Correspondence Group
- **2012-2013:** Design and Equipment Sub-Committee drafts non-mandatory guidance
- **2014:** MEPC – approval of Guidelines and notes future possible work

IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine Life – (MEPC.1/Circ.833)

- Recognizing that UW noise associated with shipping was an issue that could be mitigated and addressing its short and long-term negative impacts on marine life, especially marine mammals
- IMO approved guidelines for commercial ships on ways to reduce UW noise
- Non-mandatory instrument



IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine Life – (MEPC.1/Circ.833)

- Application: any commercial ship
- Purpose/definitions, standards and references
- Design considerations: **propellers**, hull design and onboard machinery
- Advice on: technologies for existing ships
- Operational and maintenance considerations: propeller cleaning, underwater hull surface, selection of ship speed, re-routing to avoid sensitive areas



IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine Life

- When adopting the Guidelines, it was noted that there were still significant knowledge gaps
- Sound levels in the marine environment and the contribution from various sources was a complex issue
- So setting future targets for underwater sound levels emanating from ships was premature and more research was needed





Special Areas and Particularly Sensitive Sea Areas (PSSAs)

- Issue of **underwater noise** and its effects on marine life also taken into account through IMO adopted PSSAs

PSSAs - special protection through action by IMO

- due to significance for recognized ecological, socio-economic or scientific attributes vulnerable to damage by international shipping activities
- associated protective measures adopted by MSC

15 PSSAs (including 2 extensions) currently in existence globally

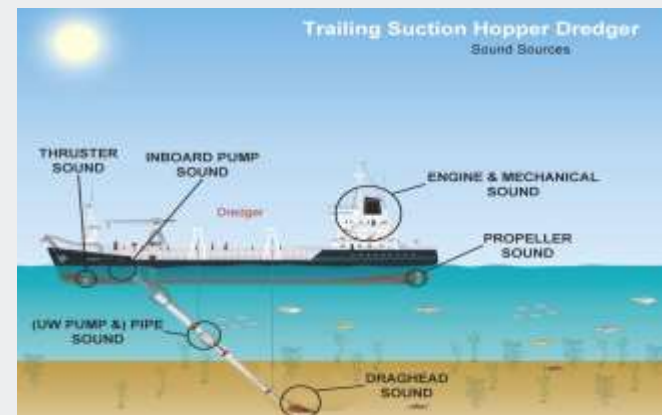
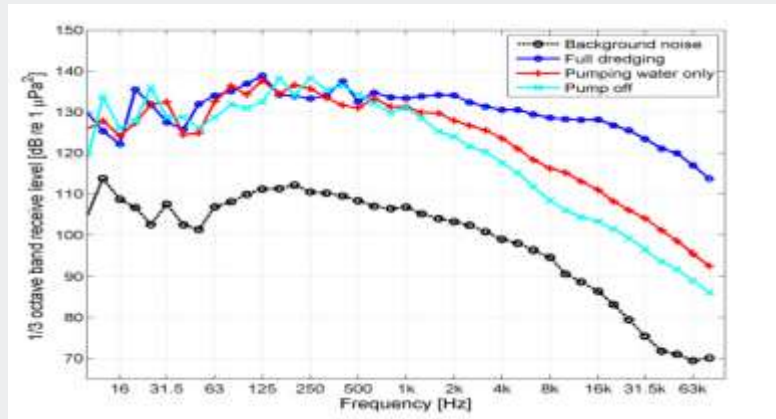




Dumping of wastes and other matter at sea

London Convention 1972 and the 1996 London Protocol

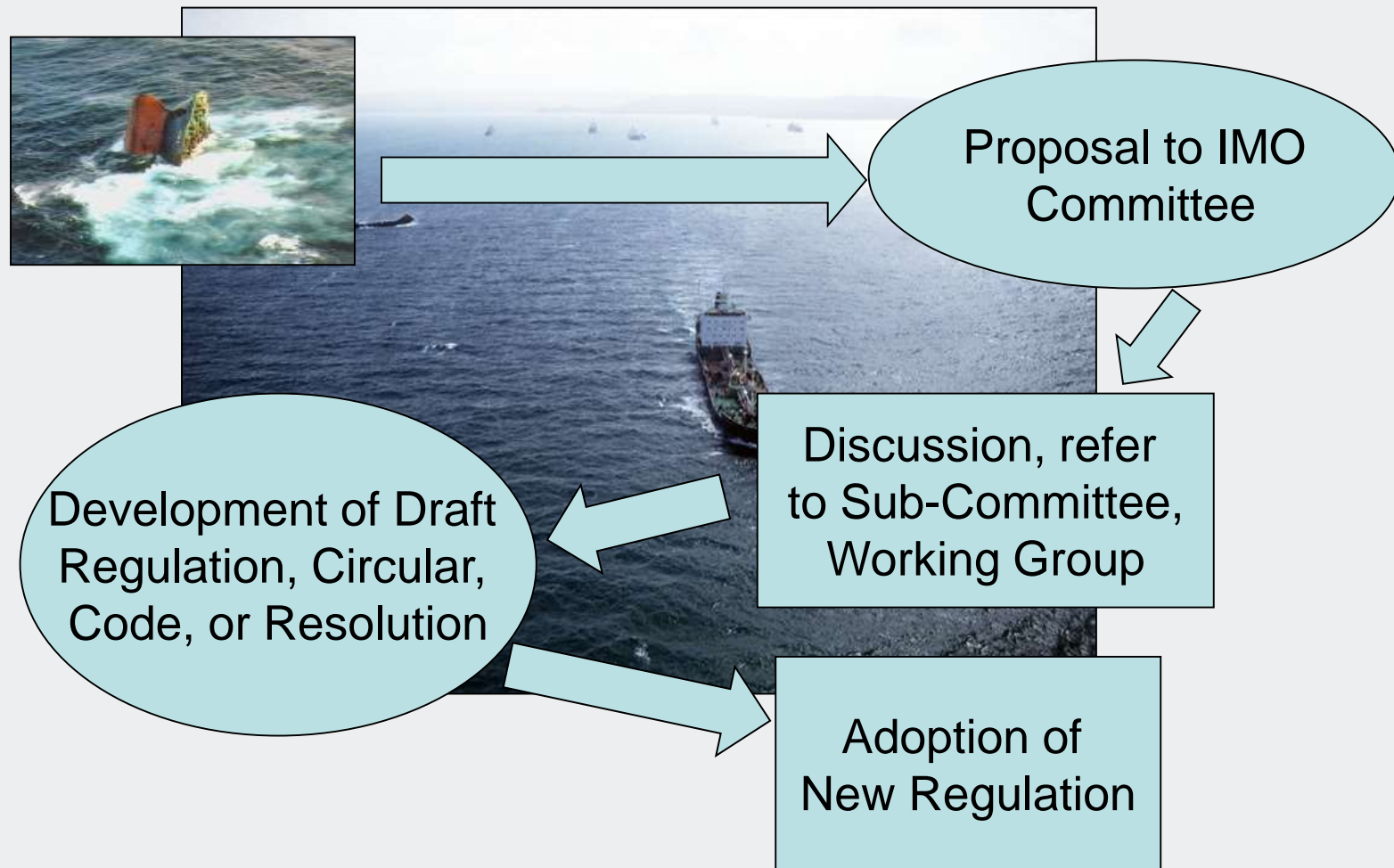
- Regulates dumping of wastes and other matter at sea, by providing a framework to prevent, reduce and where practicable eliminate marine pollution caused by dumping
- Noise discussed under LC/LP – noting that dredging activities, being the main source of wastes dumped under these treaties, are also a source of anthropogenic UW noise (CEDA/WODA)



Next Steps?

- Since the IMO guidelines were adopted research and understanding of underwater noise emitted from commercial ships and the impacts of underwater noise has increased
- Understanding the awareness and effectiveness of the IMO Guidelines
- IMO Member States (led by Canada) looking to prepare a new work output proposal to MEPC, which will aim to address the policy needs related to underwater vessel noise

Progress of Measures at IMO - Example



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