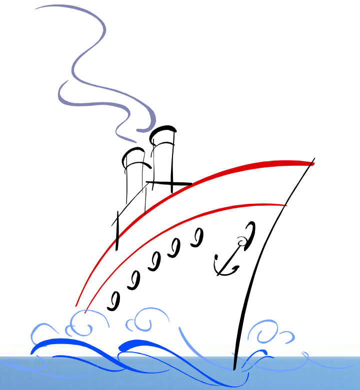
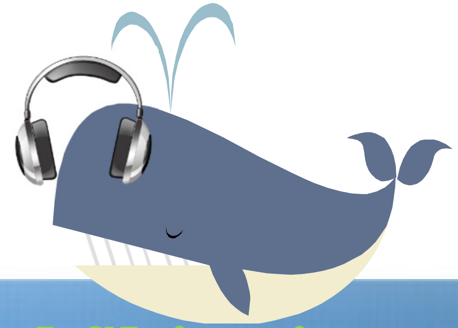
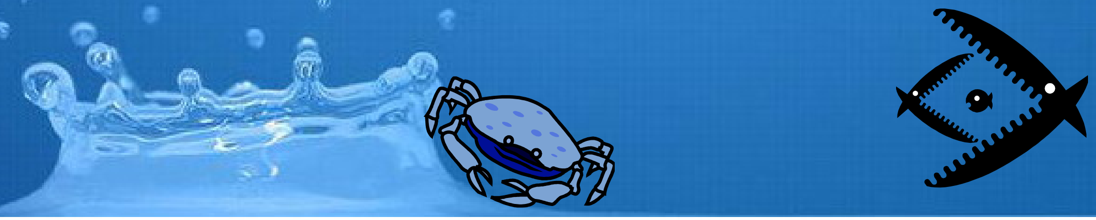




Underwater Noise from Commercial Shipping

A glance over

"Background", "Actions taken by Shipping Industry" and "Decision made by MEPC"



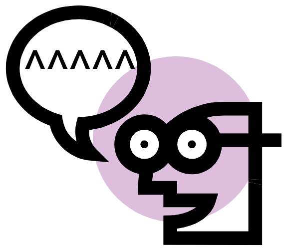
O Kitamura

Mitsubishi Heavy Industries, Ltd./SAJ

Introduction: Problematic trends claimed

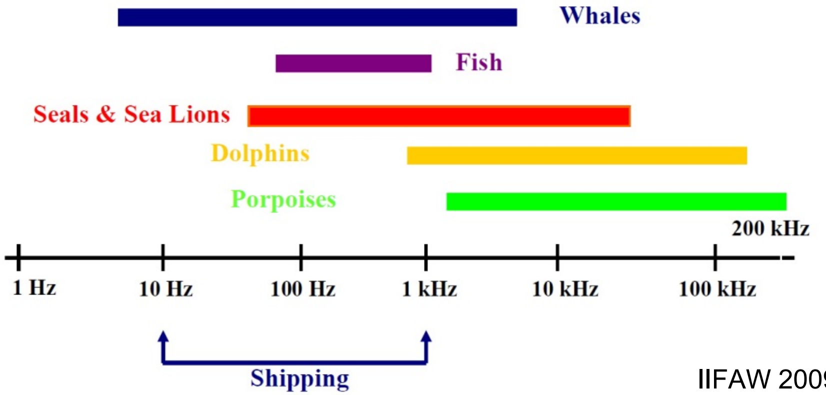
- It is said that commercial ships, which are increasing in both number and size, are producing ever-greater amounts of underwater <u>low frequency</u> noise.
- It is estimated that background noise from commercial shipping in some ocean areas off the coast of California has been <u>doubled</u> per decade in terms of sound level.
- Potential adverse impacts of incidental shipping noise is not related to acute exposures but rather to the general increase in continuous background ambient noise and the potential <u>masking</u> of marine animals' communication systems.





Opening: Proposal made by USA

- To MEPC58 (2008), USA proposed a new work item to develop technical Guidelines for minimization of radiated underwater noise from commercial shipping, with a view to protecting critical life functions such as communicating, foraging, evading predators and navigating of marine animals (including mammals, fish and even some invertebrates).
- Supported by Australia, the International Fund for Animal Welfare (IFAW) and Friends of the Earth International (FOEI), IMO decided to tackle this issue.



IIFAW 2009

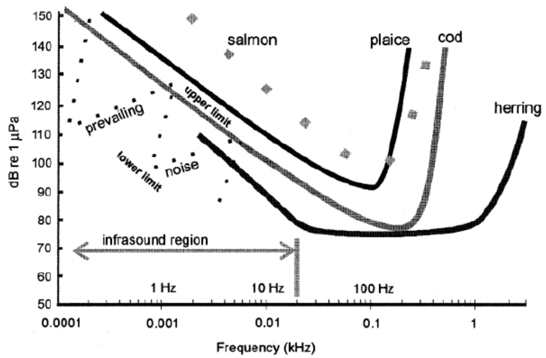


Figure. 7. Extended fish hearing thresholds in terms of sound pressure obtained by re-plotting particle acceleration data and linking it with earlier sound pressure measurements. Predicted ambient noise levels in the infrasound region are also shown.

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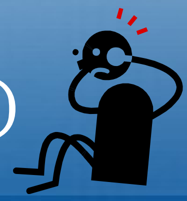
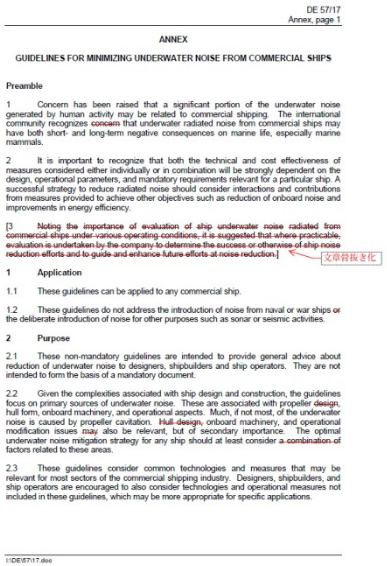
Draft Guidelines submitted by CG to DE 57 (Mar. 2013)



- Original draft Guidelines submitted to DE57 referred to:
  - Quantitative effect of cavitation on underwater noise;
  - Needs for minimization of welding bead projection on wet outer shell plates and their weld distortion, and smooth paintwork;
  - Needs for making wake field as homogenous as possible;
  - Preference of diesel-electric, turbine, podded propeller or water jet propulsion system rather than direct diesel-driven one, and active vibration control devices on diesel engine;
  - Needs for propeller cleaning and maintenance of smooth underwater hull surface; and
  - Needs for periodical inspection and monitoring of machinery and equipment, etc. throughout operational life

Actions taken by Shipping Industry at DE 57 (Mar. 2013)

- Shipping Industry expressed **great** concern at DE57 (2013) over the details one by one based on the understanding that there had been **limited** technical backgrounds such as noise level acceptable to marine life to compel into investment.
- Shipping Industry finally succeeded to delete or moderate the contents extensively without objection by member States.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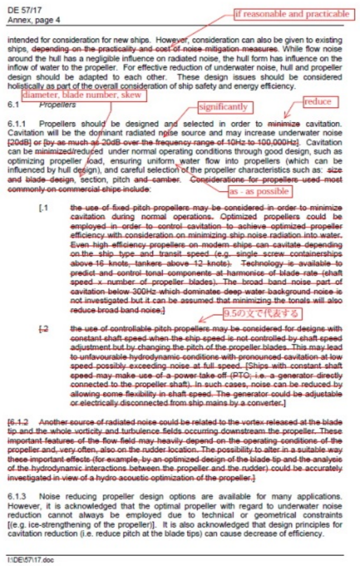
ANNEX

GUIDELINES FOR MINIMIZING UNDERWATER NOISE FROM COMMERCIAL SHIPS

Preamble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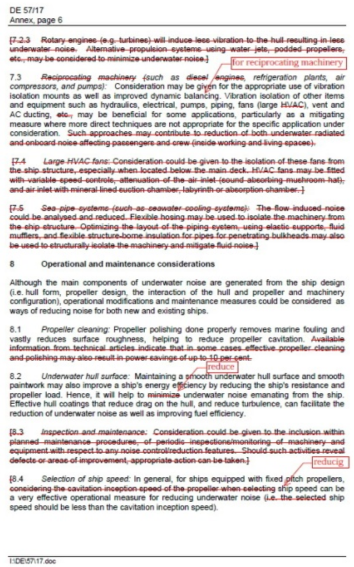
Annex, page 4


DE 57/17
Annex, page 6

Closing: Decision made at MEPC 66 (Apr. 2014)

- MEPC66 (2014) approved the relaxed Guidelines brought up by DE 57 with minor changes (MEPC.1/Circ.833) noting that:
  - There are **a large number of** gaps in knowledge;
  - There are **various** sources of underwater noise and their contribution is a **complex** issue;
  - Setting future targets for underwater noise levels is **premature**; and
  - **More** research is needed.

- Shipping Industry is very much **reluctant** to revisit this issue.
- Shipbuilding Industry should also refrain from reopening this issue thoughtlessly.