

Non Regulatory  
Technical  
and  
Operational  
Criteria  
for  
Ballast Water Management  
Systems

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## Preamble:

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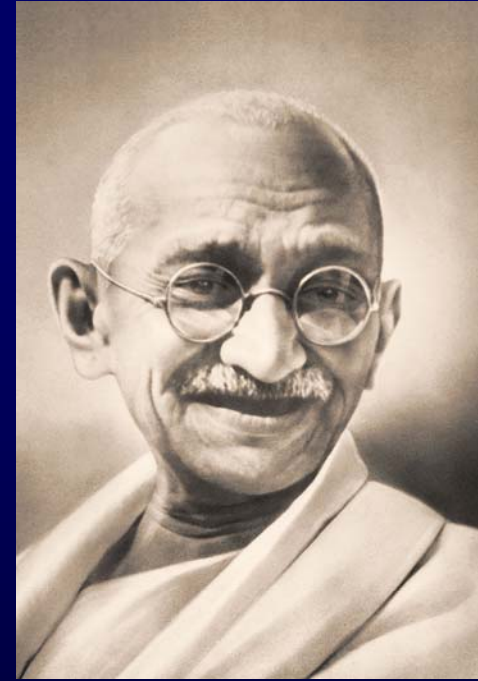
G8 provides some technical and operational requirements for BWMS type approval; these are mainly relevant to the operation of the system and its compliance with D2.

Other criteria which would make design and operation of a BW management system suitable for onboard ship applications and consequently would provide acceptability and marketability of the final design are not clearly defined.

Some of these criteria are in the remit of IMO or other regulatory bodies.

Some are not.

“A principle is the expression of perfection,  
and as imperfect beings like us cannot  
practise perfection,  
we devise every moment limits of its  
compromise in practice.”



# Engineering Design

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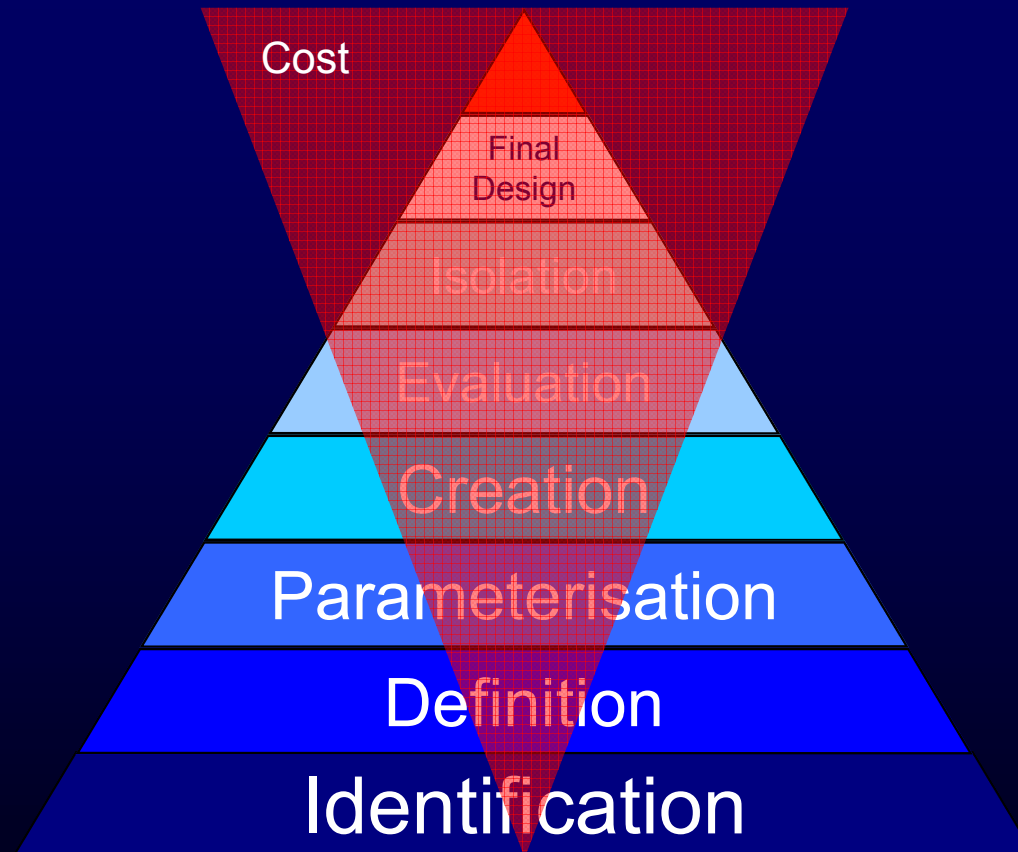
The recognition and understanding of a basic need and the creation of a system to satisfy that need.

The formulation of a problem is often more essential than its solution, which may be merely a matter of mathematics or of experimental skill.

A poor solution to the right problem is better than an elegant solution to the wrong problem!

# Engineering Design

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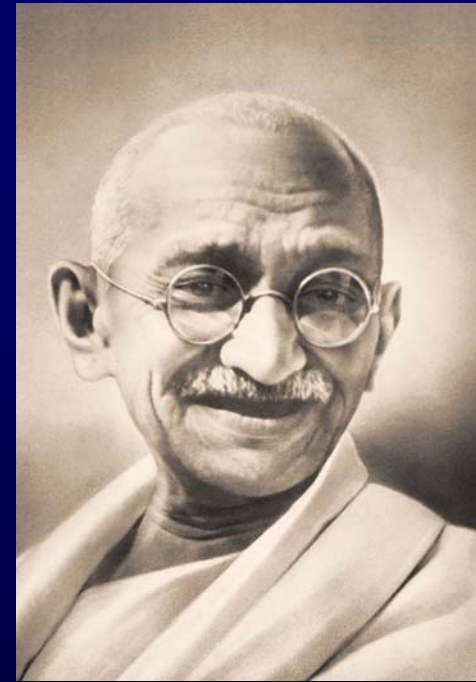


# The Application

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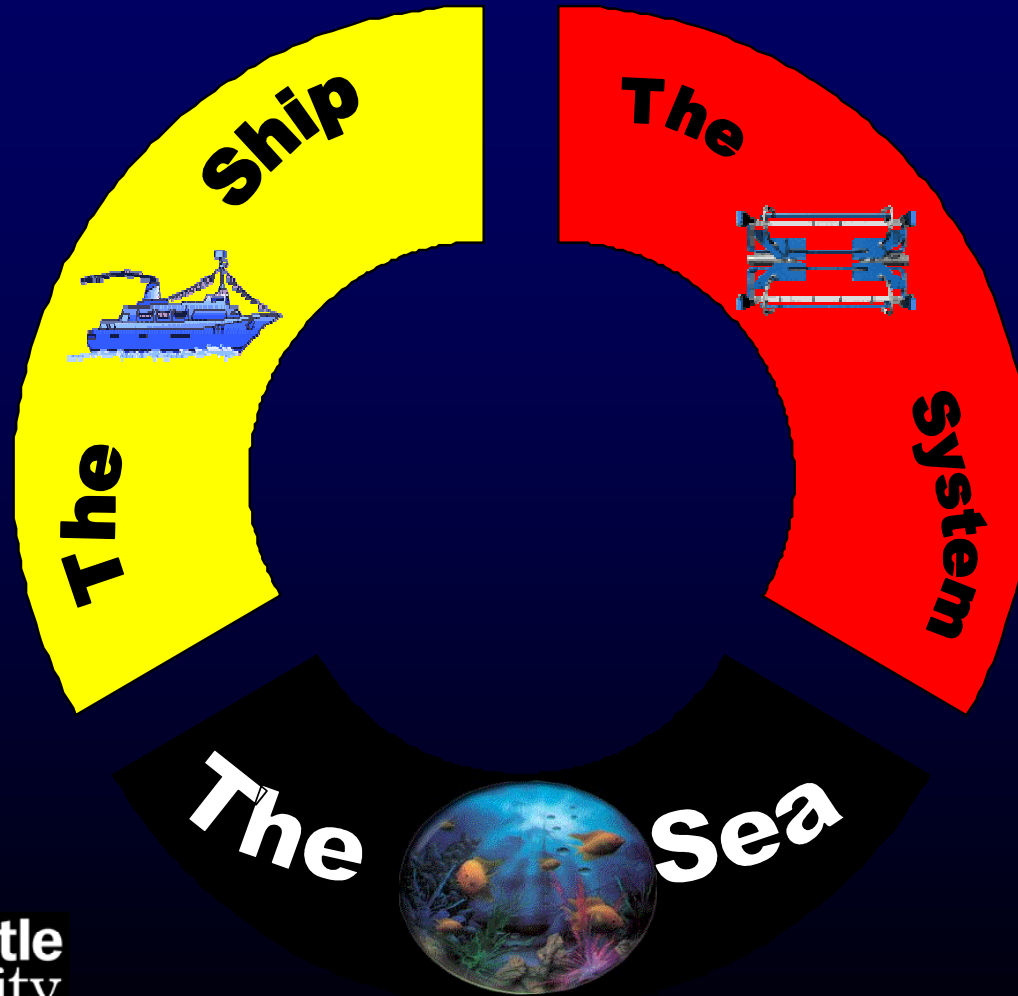


“A policy is a temporary creed liable to be changed, but while it holds good it has got to be pursued with apostolic zeal.”



# Ballast Water Management System

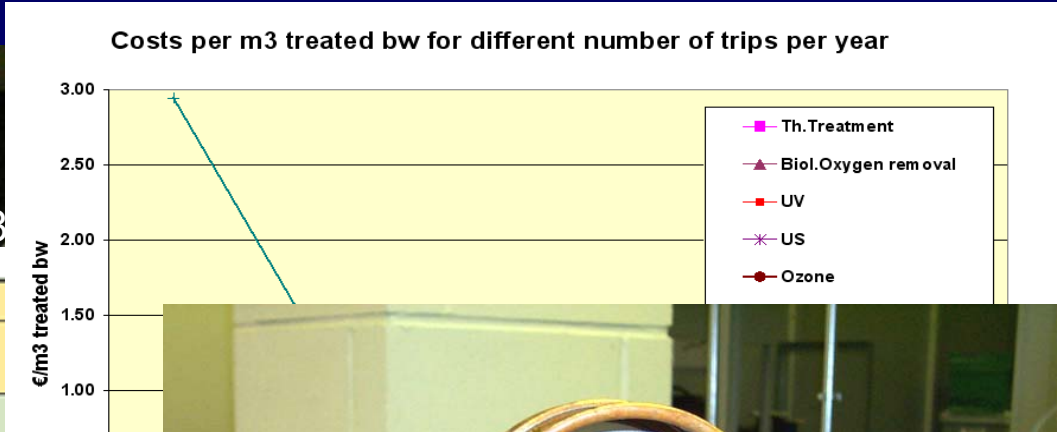
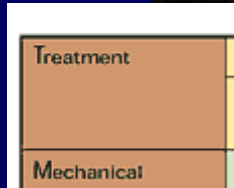
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# The System

Effectiveness

LCA



[Source: Ballast water treatment te



SW Corrosivity

Ballast Tank Coating System, Pipes, ...

# The Ship

Mission Profile

Type

BW Cap

BW Pur

E/R Des

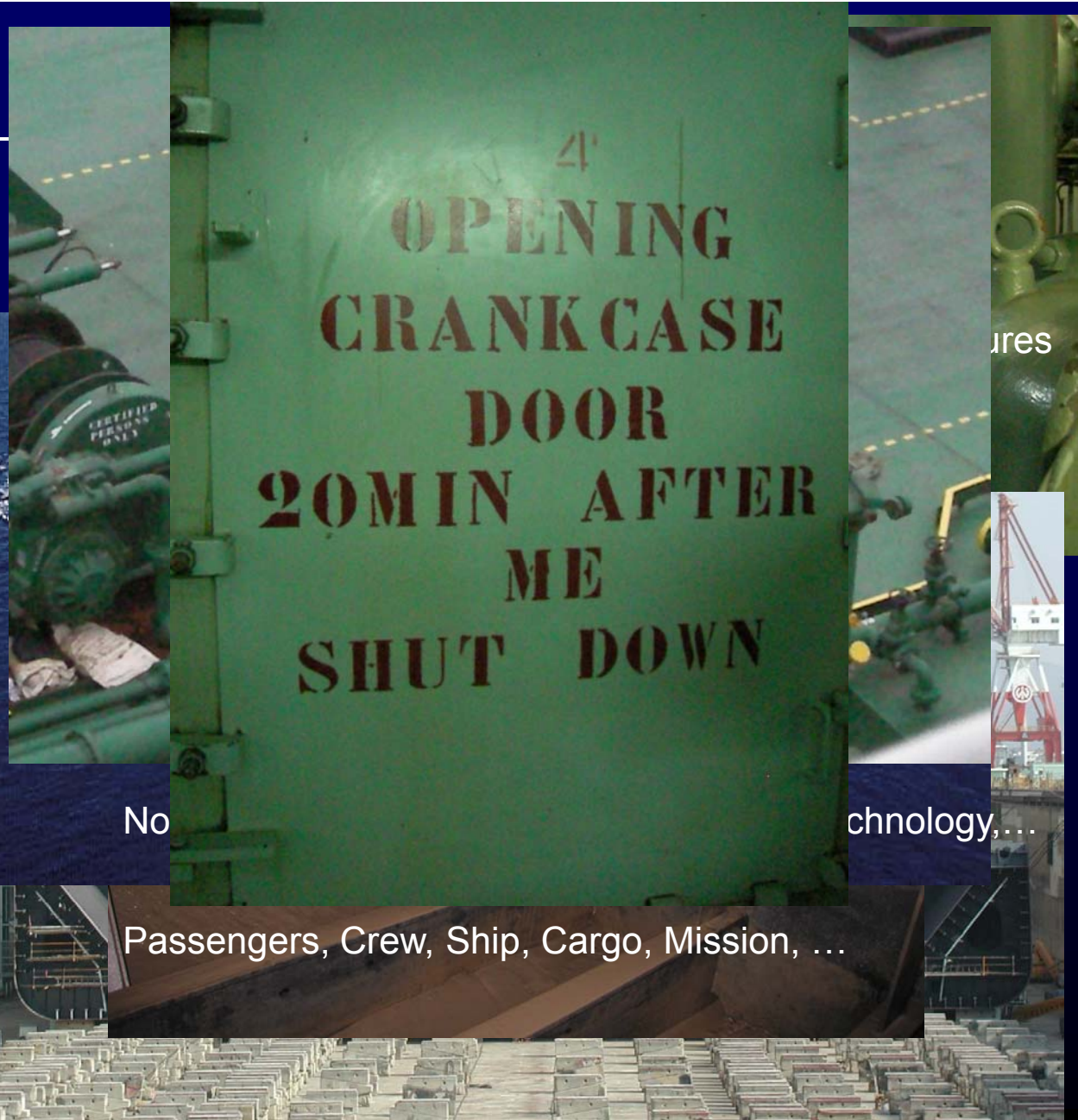
Manning

No

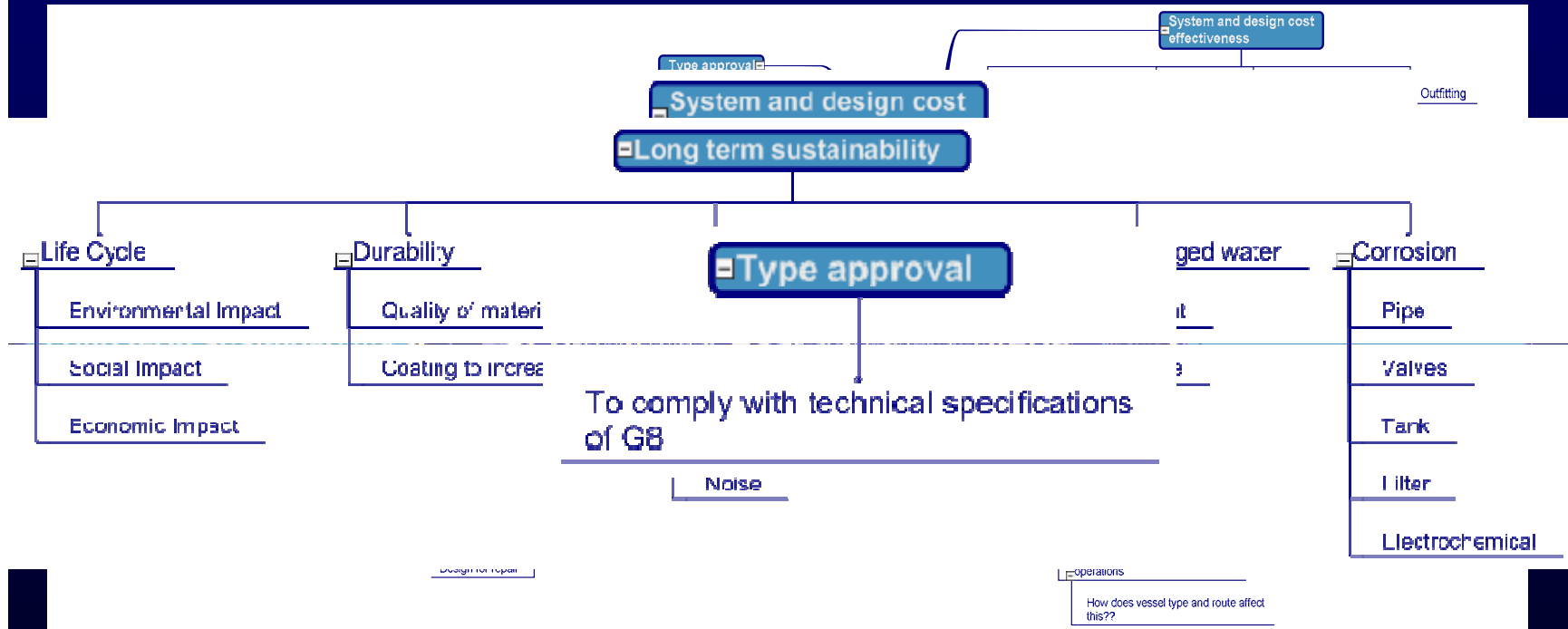
chnology,...

Risk/Safety

Passengers, Crew, Ship, Cargo, Mission, ...



# An Example



# Finale

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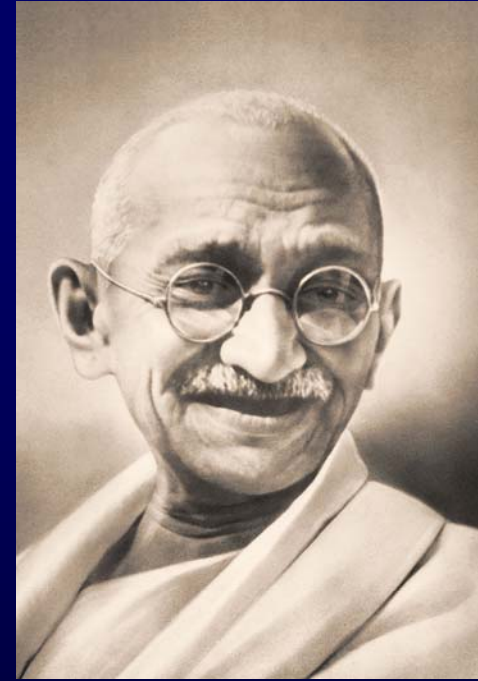
- Good news: Many systems have already been put forward and new proposals are being developed.
- Compliance with G8 and GESAMP's approval is not the end of the road for development of an implementable Ballast Water Management System.
- It is paramount that implementation of BW Convention should not be in contradiction with any other IMO conventions, such as MSC and SOLAS.
- Unilateralism and development of local regulations will change the targets and will certainly jeopardise technical developments and international implementation of the Convention.

# Finale

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- From scientific, technical, operational and implementation points of view, G8 is not immune from complications and even contradictions, nevertheless, its existence has stopped “moving the goal post” for system designers.
- Discharge of Ballast Water is not the only vector for introduction of non-indigenous species across the world. Quantified and qualified impact assessment methodologies to clarify and isolate vectors of bio-invasions still remain as a major requirement for technological developments.

“The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems.”



Thank You

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